

V. Analysis of Trail Corridor Segments

A. OVERVIEW OF SEGMENTS

1- Historic Bartram's Garden – Fort Mifflin via Schuylkill River Corridor

Overview

The trail corridor analysis includes areas of southwest Philadelphia between the historic sites of Historic Bartram's Garden and Fort Mifflin to the west of the Schuylkill River. Several potential short-term routes were considered on road within primarily commercial and industrial areas. Also considered was a long-term route following the Schuylkill River's west bank, as envisioned in the Tidal Schuylkill River Master Plan; however, for the foreseeable future (at least the 25-year horizon), the presence of active, hazardous industries such as oil refineries and waste disposal facilities would make this area unsafe as the location for a trail. A potential trail route around the perimeter of the U.S. Army Corps Mud Island facility was also evaluated, but is considered infeasible at this time due to potential conflicts between recreational trail users and active dredge disposal operations. Thus, while the west bank riverfront route is evaluated below, it is not recommended as a preferred long-term alignment at this time.

Potential connections to South Philadelphia communities east of the Schuylkill's east bank via the Penrose Avenue, Passyunk Avenue, and Grays Ferry Avenue bridges exist. The idea of routing the trail along the east bank of the Schuylkill River south of Grays Ferry Avenue was rejected due to the presence of large, contiguous tracts of hazardous industrial properties along the riverfront, lack of green open space (public or private) or other amenities for trail access, and the distance of South Philadelphia communities from the river.

Alignment Characteristics

Possible Short-term Alignment (On Road):

- *Historic Bartram's Garden southwest to Bartram Avenue*

Option #1:

Exit from Bartram's Garden could be 54th and Harley streets to 56th Street, west to Lindbergh Boulevard, and south along Lindbergh Boulevard to Island Avenue or to 84th Street. From either 84th Street or Island Avenue, head southeast to Bartram Avenue.

Option #2:

Alternative route from Bartram's Garden south could take Lindbergh Boulevard to 63rd Street, then east to Passyunk Avenue and south along Essington Avenue to Bartram Avenue.



Segment 1 Historic Bartram's Garden – Fort Mifflin via Schuylkill River Corridor

Existing Conditions:

54th and Harley streets comprises the formal entrance to Bartram's and marks the connection between the Botanic Trail and Tinicum-Fort Mifflin Trail. The trail could alternatively head west on 56th Street, as there is currently access to the road via the south end of Bartram's Garden beyond the community park. The trail can not be routed along the riverfront and then to 58th Street, because the 9-acre U.S. Gypsum property just south of Bartram's was recently sold at auction to commercial interests and access through the property is no longer available.

Lindbergh Boulevard has been identified and evaluated as a potential route for Philadelphia's Bicycle Network. Currently, the main concerns for bicycle safety include the relatively large volume of traffic along this commercial/residential corridor and obstacles such as the trolley tracks and cars parked along the shoulder. The road will be undergoing reconstruction to accommodate a new post office and commercial development that will take up the equivalent of eight city blocks between 70th Street and Island Avenue. The Philadelphia Streets Department is taking the new traffic patterns likely to be generated by this development into consideration, and bike lanes will be accommodated into the design. In the interim, a striped shoulder will be in place.

63rd Street between Passyunk Avenue and Lindbergh Boulevard has also been evaluated as a potential route for Philadelphia's Bicycle Network. At this time, no improvements have been made to these streets for enhanced bicycle safety, although relatively wide bicycle lanes are proposed. Lindbergh Boulevard would need landscaping to visually enhance it as a bikeway.

84th Street, which connects Lindbergh Boulevard and Bartram Avenue, is a designated part of the Philadelphia Bicycle Network. It does not have separate bike lanes, although it does include a wide shoulder in each direction and "Share the Road" signs. Bike lanes are to be completed in 2004. Island Avenue between Lindbergh Boulevard and Bartram Avenue is designated a "bicycle friendly street" because of its wide shoulders but does not include bike lanes.

Essington Avenue has been rated as a "bicycle friendly street" as part of the Philadelphia Bicycle Network. It was rated above average for bicycling; however, it does not have a bicycle lane, cars are parked along the shoulder, and there are commercial driveways exiting onto the street at frequent intervals. Lindbergh Boulevard is preferable because it has a wider shoulder for bicycle use, fewer cars parked in the shoulder, fewer curb cuts, and fewer commercial and residential driveways than Essington. However, bike lanes will be developed for Essington Avenue's auto mall section by the end of the summer, 2003, as part of the design of service roads on either side of Essington. This improvement may make Essington more competitive with Lindbergh Boulevard for bike use.

The southern end of Passyunk Avenue, which leads into Essington Avenue, has also been rated above average for bicycling; however, the same bicycling safety issues apply as on Essington Avenue. Passyunk Avenue is a potential trail link between south and southwest Philadelphia neighborhoods—the City of Philadelphia is studying the Passyunk corridor between Broad and 63rd streets. The Passyunk Avenue Signal Corridor is on the Delaware Valley Regional Planning Commission's Transportation Improvement Projects list, and includes signal modernization for 14 intersections. Signaling and surface improvements are scheduled for 2005-6; however, due to the narrow traffic lanes, implementing a separate bike lane may not be possible.

All of the potential on road trail segments mentioned above would need signage, bike lanes, pavement surface repairs, and curb cuts to make them as safe as possible for bicyclists, and pedestrians as well.

Land Use and Ownership Patterns:

The trail would traverse primarily residential and commercial corridors along public rights-of-way maintained by the Philadelphia Streets Department.

Possible Short Term Alignment (On-Road) – cont.

- *Bartram Avenue east southeast to Fort Mifflin*

Option #1:

Turn left (south) from Lindbergh Boulevard onto Island Avenue and head south on Island Avenue for approximately 1 3/4 miles and then turn northeast onto Enterprise Avenue. Enterprise Avenue allows access to the Southwest Water Pollution Control Plant, which offers public tours to groups by appointment. Turn right onto new Fort Mifflin Road, and loop around to the southeast, connecting with a section of new Hog Island Road. This road passes through a tunnel underneath airport runway 8-26 and continues southeast to Fort Mifflin.

Option #2:

Continue northeast on Bartram Avenue from either the Lindbergh Boulevard/Island Avenue route or Essington Avenue to the junction with Penrose Avenue. Take a sharp right onto Penrose Avenue, passing under I-95, then head south on an older spur of Penrose Ferry Road. Jog back to the north at the junction with old Penrose Ferry Road. Head northeast on Penrose Ferry Road to the junction with an abandoned section of old Fort Mifflin Road. Take a sharp right and follow this road southeast until the junction with an abandoned section of old Hog Island Road. Head south on old Hog Island Road to the junction with new Fort Mifflin Road/new Hog Island Road.

This alternative allows a side trip to the Southwest Water Pollution Control Plant and Biosolids Recycling Center, both of which are managed by the Philadelphia Water Department and offer public tours to groups by appointment. The trail also offers the possibility of accessing community gardens via a dirt/gravel road along the Schuylkill riverfront. The trail connects to Penrose Avenue via the George C. Platt bridge and F.D.R. Park in South Philadelphia.

Existing Conditions:

Island Avenue from Lindbergh Boulevard to I-95 is designated a “bicycle friendly street” because of its wide shoulders but does not currently have bike lanes. Bike lanes are anticipated on either side of Island Avenue for the future, the final design to be completed late in 2004. Bartram Avenue has bike lanes on both sides of the road from the Route 291 intersection north to Island Avenue, although the section between 84th Street and Island Avenue is marked as a shared roadway for bicycles and motor vehicles. The connection to Eastwick Station at 84th Street is problematic for trail users. There is a push button signal for pedestrians and bicyclists at the 84th Street/Bartram Avenue intersection; however, there is no sidewalk or street crossing at the station. Eastwick Station is a critical multi-modal juncture in the trail. Behind the station it is possible to access John Heinz NWR. Eastwick is also a stop along the R1 airport line, which accesses Philadelphia International Airport terminals.

Close to the Eastwick station on Bartram Avenue's east side, near the 88th Street intersection, are located Marriott Residence Hotels, Fairfield Inn, and the Airport Interplex. The short-term residents and area visitors should be provided with trail access.

Bike lanes do not continue along Bartram Avenue east of Island Avenue. This Bartram Avenue segment experiences relatively high volumes of traffic, although vehicles exceeding posted speeds do not appear to be a concern. There is a "Share the Road" sign over the 84th Street bridge.

Below the Platt Bridge several quiet roads offer a few alternative trail routes. Bartram Avenue becomes Penrose Avenue at its eastern end. Penrose Avenue includes a walkway on the south side of the George C. Platt Bridge and is a designated segment of the Philadelphia Bicycle Network. Penrose Ferry Road, which parallels Penrose Avenue, is little used by motorized vehicles. Although narrow, it is relatively safe for use by bicyclists or pedestrians. The road could accommodate the development of bike lanes and/or side paths. The main area of concern is the isolation of this area and the presence of active industries—oil refining and sewage treatment—on either side of the road. In an emergency, it would be difficult to locate and assist a trail user. Also, the volatility of fuels creates a potential explosion hazard; therefore there needs to be a buffer between refining facilities and any residential, commercial, or recreational activities. In addition, byproducts of the refining process may contaminate the area's soils, creating another potential safety hazard for trail users, although "capping" of soils as part of the trail design may alleviate this concern.

Isolation is also a concern for the little used segment of Hog Island Road west of Mud Island. While relatively narrow and lacking a shoulder this road does not appear to be used by many motorized vehicles, and contains few obstacles for bicyclists or pedestrians. Old Hog Island Road, with surface repair, would work well for a bicycle route, and a side path for walking could be developed. This road currently ends at I-95, but continues as a former roadbed under I-95, and can link with the recently constructed section of Fort Mifflin Road, thereby reaching Fort Mifflin.

New Fort Mifflin/Hog Island Road, adjacent to the Philadelphia International Airport and Fort Mifflin, has a 3-foot or less shoulder on either side, although traffic volumes are relatively low and the posted speed is only 25 mph. A combination of bicycle lanes and side paths would allow for a multi-use trail along the new Fort Mifflin Road.

The alternative Island Avenue - Enterprise Avenue segment currently has low traffic volumes, and a mix of vacant airport facilities and other active low-rise offices. This entire area is under planning by the airport, and needs to be monitored for any design changes at such time the trail is planned in more detail through this area.

Land Use and Ownership Patterns:

The potential trail corridors along Bartram, Enterprise and Island avenues are all public rights-of-way. Trail development and use should be coordinated with the Philadelphia Streets Department. Hog Island Road, Penrose Ferry Road/Bartram Avenue, and Island Avenue/New Fort Mifflin Road are also public rights-of-way. Bicycle lanes for these latter roads could be developed in existing shoulders (many of which are currently used as de-facto bicycle lanes), with a side path for walkers/hikers/joggers. The development of side paths may require the acquisition in fee or easement of additional right-of-way. However, as most uses along these roadways are set back a considerable distance, such development is possible.

Possible Long-term Alignments (Primarily Off Road)

Overview

From Bartram's Garden, a route has been proposed by the Schuylkill River Development Corporation which would in general follow the west bank of the Schuylkill River from Bartram's Garden to the mouth of the Schuylkill, and then to Fort Mifflin. This potential trail route was envisioned in the Management Action Plan for the Schuylkill River Heritage Corridor as well as the Tidal Schuylkill Master Plan. Development of an off road, riverfront trail corridor, which includes several alternative alignments, would be a long term process over the next 25 to 30 years or longer and would be appropriate only if certain conditions are met. In the short-term, within the next three to five years, a trail route could be developed using on-road bike lanes and/or pedestrian paths along public rights-of-way. This would also avoid the possibility of bringing bicyclists into any unsafe, isolated areas along the Schuylkill's industrial west bank, including not only oil refining areas but also the U.S. Army Corps of Engineers Mud Island dredge disposal facility.

Clearly, any riverfront or off road river corridor trail development would need to further investigate land ownership, establish environmental conditions of the proposed trail corridor and whether or not remediation is required and/or feasible, evaluate commercial and industrial activities on lands bordering the trail, and address liability issues prior to selecting a preferred long-term riverfront route.

- *Historic Bartram's Garden to 61st Street*

Option #1:

Heading south from Bartram's Garden, the trail could take a direct riverfront route to 61st Street past the former U.S. gypsum plant. This trail route would follow the river past properties that are currently a mix of various inactive and active industrial properties as well as a few small-scale auto salvage yards. These properties include the G.F. Kempf Co. building supply business between 59th and 60th streets, and several acres of Philadelphia Industrial Development Corporation land southeast of Kempf near 61st Street. This long-term route is predicated on changing land uses that would be compatible with recreation, and landowners willing to sell their properties or provide riverfront easements. In addition, the CSX rail corridor cuts this area off from the river.

Option #2:

If the gypsum plant is not acquired and added to the Bartram's Garden property, an alternative would be to use the currently active Conrail/SEPTA line as a possible "rail with trail," provided that the current or future owners of the rail right-of-way agree to an easement for public trail use.

Both options #1 and #2 would head south along the riverfront towards 61st Street and then along 61st Street to intersection with Passyunk. At 61st Street a service road branches off and leads to a 35-acre wetland between oil tank farms and the Schuylkill River.

Existing Conditions:

The formal entrance to Bartram's Garden at 54th Street would be the preferred route to exit the site. At this time, a riverfront route south of Bartram's Garden below the adjacent former gypsum plant is very unlikely. A riverfront trail would enable users to access Sun Company sponsored wetlands, a community playground, and baseball field near Bartram's Village. If the gypsum plant is not acquired as part of Bartram's Garden, then there is the possibility of following a right-of-way currently used by the CSX line with a nearly grade-level track bed built to accommodate two tracks. Only one track currently exists for freight use, and the physical potential exists to utilize the remaining rail bed as a trail, although CSX has shown its reluctance to allow trail development pending a possible increase in freight service. The rail bed branches off east towards the river at 58th Street and becomes trackless. Conrail, the prior owner, sold this portion of the rail bed in 1988 to private commercial interests, mainly auto salvage yards, and the rail corridor is currently not available for potential use as a rail-trail; however, should current land uses change to those more compatible with recreational interests (e.g., residential, institutional) and willing landowners be found to allow public easements for trail use, this route may become feasible.

Land Use and Ownership Patterns:

From Bartram's Garden to the George C. Platt Bridge (Route 291), the west bank of the Schuylkill River has seen heavy industrial uses for most of the 20th century. Some of the industrial sites have now fallen into decay, leaving a pattern of active heavy industry interspersed with brownfields. However, there are "recovering" natural areas. For example, the section of trail corridor below Bartram's to 61st includes a 35-acre wetland near 61st Street. Remediation of such sites may make it possible for trail users to access them some day. Currently, much of the riverfront is a considerable distance from the nearest public roads, with some exceptions. Personal security and safety issues would need to be addressed in order to make this area appropriate for a trail due to the potential isolation of trail users and possible exposure to hazardous activities.

There is some commercial activity at Passyunk Avenue, where there is a mixture of sex-related industries and auto parts dealers. Ownership of private properties below Bartram's and south to Passyunk appears to be relatively small parcels and, should an easement or acquisition for a riverfront trail be contemplated, would be difficult to accomplish.

In addition, the former Conrail freight rail corridor below Bartram's Garden has been sold off in parcels during the past couple of decades, thus greatly complicating the use of most segments as a rail-trail. The numerous, relatively small, privately owned parcels would make negotiation of riverfront trail access time-consuming, difficult, and costly.

Provided that environmental remediation and clean-up occurs in appropriate riverfront areas between Bartram's Garden and Penrose Avenue, and some change in land use activities occurs, safe access for riverfront recreation and environmental interpretation may be designed for several sites in the future, even if a continuous west bank riverfront trail is not possible. An environmental assessment would be needed for specific riverfront parcels identified as formerly or currently industrial, if a riverfront trail is to be developed below Bartram's Garden on the west bank.

- *61st Street to George C. Platt Bridge (Penrose Avenue/Route 291)*

The next potential long term segment of the trail could head further south along the west bank of the Schuylkill. Between 61st and 67th streets, set back from the river, are mainly auto salvage yards and “mom and pop” junkyards. About ½-mile south of 67th Street is Harkness Point, a 40-acre forested wetland area distinguished from Exxon tank farms to the north and Sun Company tanks to the west. The latter are ¼-mile back from the wetland area. Rail beds extend south along the riverfront to “Mingo Creek,” a remnant wet area that is now a channelized stream. The rail bed has been sold to the Philadelphia International Airport. Although the rails and ballast look relatively new, the rail is inactive. A trestle carries this rail section south across Mingo Creek to Penrose Avenue.

Existing Conditions:

Sections of the riverfront have returned to woods, such as the 40-acre Harkness Point tract in the 67th Street/Passyunk Avenue area and the Sun Oil property just north of the Platt Bridge, near Mingo Creek. Remediation of these sites may make it possible for trail users to access them some day, even if a continuous trail paralleling the west bank of the Schuylkill is not feasible.

However, much of the riverfront is some distance from the nearest public roads, with some exceptions. The land use activities along the riverfront between 61st Street and Penrose Avenue consist of auto salvage yards interspersed with oil tank farms, arguably operations that have security and safety concerns. Many of these areas have been past dumping grounds for not only household trash but also hazardous chemicals requiring remediation. Thus, personal safety of trail users is a significant issue. Discussions with the Philadelphia City Planning Commission indicate much of this land is anticipated to remain in “least restricted” industrial use for the foreseeable future, making trail access to these properties particularly hazardous at this time. Using on road routes for the trail, perhaps along Essington Avenue or Lindbergh Boulevard, appear to be the most practical in the short-term.

Land Use and Ownership Patterns:

Ownership of private properties below Passyunk Avenue to Penrose Avenue and the Platt Bridge appears to be in very large parcels. This situation would usually mean that it is more likely that a riparian easement could be created in this area as part of the rezoning and reuse of these properties; however, the bulk of these riverfront properties are active oil refining facilities and therefor not suitable for the location of a trail in the foreseeable future.

Trail development in this area should be coordinated with development plans along the Passyunk – Penrose Avenue corridor, which may be included in the new Philadelphia International Airport Master Plan. The planned use for portions of this corridor as an industrial park for businesses needing proximity to the airport may provide opportunities to create a trail.

- *George C. Platt Bridge / Penrose Ferry Road to Old Fort Mifflin Road / Old Hog Island Road junction*

The trail route could continue south under the Platt Bridge (Penrose Avenue) utilizing the rail bed; however, the rail segment ends south of the bridge due to the airport runway extension.

Penrose Ferry Road is an east-west alternate that will allow access to the riverfront south of Penrose Avenue. A connecting service road set back from the Schuylkill River then heads southeast, taking a jog to the east before splitting into two potential alternative trail routes. One route could follow Old Fort Mifflin Road to potentially access the U.S. Army Corps of Engineers (USACE) dike road around Mud Island, heading southeast past the community gardens. The other trail route alternative could follow Old Hog Island Road, heading south past the Southwest Water Pollution Control Plant for wastewater treatment and under I-95 to more directly reach Fort Mifflin. The plant and the nearby Biosolids Recycling Center offer public tours by appointment. The former route around Mud Island is currently considered to be infeasible, due to possible trail user conflicts with active dredge disposal operations.

Existing Conditions:

Penrose Ferry Road's surface is in good condition for bicycle and pedestrian use, and traffic volumes are low. This is also true for the service road that joins old Hog Island Road and old Fort Mifflin Road.

Land Use and Ownership Patterns:

The potential trail corridor along Penrose Ferry Road is a public right-of-way. Bicycle lanes could be developed in the existing lanes, with a side path for walkers/hikers/ joggers. The development of side paths may require the acquisition in fee or easement of additional right-of-way. Current land uses along this roadway are set back a considerable distance making development of side paths possible.

- *Old Fort Mifflin Road / Old Hog Island Road junction to Fort Mifflin*

Option #1:

The old Hog Island Road trail route heads south towards Fort Mifflin, connecting with New Fort Mifflin / Hog Island Road about 1/3 of a mile north of the fort. This latter route includes a spur service road that heads east towards the river prior to reaching I-95; however, there is a gate several hundred feet in that blocks access to the USACE dike road beyond.

Option #2:

Old Fort Mifflin Road leads directly to the dike road that practically encircles the dredge spoil area of the U.S. Army Corps of Engineers Mud Island facility, connecting to Fort Mifflin along the Delaware River. This road is essentially an extension of old Hog Island Road. The Mud Island dike road is nearly two miles long, running south under the I-95 bridge, and stretching through wetlands and meadows, including spectacular views of the mothballed Philadelphia Naval Base fleet and Kvaerner shipping facilities.

At the southernmost end of the U.S. Army Corps dike road lies administrative buildings, the National Guard supply complex, survey vessels and dredge hoppers, and a parking lot. Beyond a chain link fence is Fort Mifflin, an historic site with docks that command excellent positions for fishing and safe access to the Delaware River. From the fort, plane watchers can observe commuter aircraft take off and land on runway 8-26. The runway receives and sends air traffic less than a half-mile from the fort.

Existing Conditions:

One alternate route follows the Old Fort Mifflin Road to the so-called “Italian Gardens,” community gardens maintained since at least World War II. This route is probably the less feasible, unless connected to the service road spur from old Hog Island Road to the east of the wastewater treatment plant and continuing along old Hog Island Road south to Fort Mifflin. Old Fort Mifflin Road would need surface repair and a side path for walking. The old Fort Mifflin Road stops short above I-95 and above the USACE service road; however, an alternative route could follow the dikes around the Corps of Engineers’ Mud Island dredging facility at the mouth of the Schuylkill. Unfortunately, a review and tour with the Corps indicates that use of the dike is unlikely given the nature of the Corps’ current dredge spoil disposal operations.

The other alternate route utilizes old Hog Island Road, heading south past the Southwest Pollution Control Plant for wastewater treatment and under I-95 to more directly reach Fort Mifflin. One can observe a portion of the old Hog Island Road paralleling a portion of the USACE dike road to the east. This remnant of Hog Island Road crosses under the I-95 bridge and eventually joins up with the new airport tunnel and reconstructed Hog Island Road. This area is adjacent to Cell C, parts of which are undergoing new dike construction.

On the southwestern side of the USACE facility, adjacent to Cell C and old Hog Island Road, is located the airport “safe area” for plane landings, approximately 48 acres. Securing this area from public access would be a primary concern of both the USACE and airport. Using the road as a trail would require addressing this concern. It would also require surface repairs and possibly a side path for pedestrians; otherwise, traffic volumes are low and safe passage for bicyclists is possible.

The main safety concern for both alternate routes would be personal security due to the isolation of the roads. This is less a concern for the old Hog Island Road corridor, since it passes by active industries such as the Southwest Pollution Control Plant and JDM Materials, manufacturers of concrete and asphalt. In addition, more commercial activity is anticipated due to the expansion of the airport and surrounding businesses, thus potentially increasing activity levels in this area.

Access to perimeter dike roads at Mud Island is unlikely for the foreseeable future. Although once the site for an ammunitions dump, Mud Island soils are considered chemically clean and uncontaminated by live ammunition or any other hazardous materials. The main safety concerns have to do with the isolation of the site and the potential for conflicts between recreational trail use and dredge disposal operations involving the use of heavy equipment. The perimeter dirt dike roads include an upper and lower level. These riverfront roads can be quite swampy on occasion. Their alignments are also temporary, as they are subject to reconstruction to allow USACE dredge equipment access to individual dredge disposal “cells.” The perimeter roads are necessary for year-round operations. Although they could be physically improved for trail use, there are safety and liability issues associated with their use. Heavy equipment would need to access them, causing potential conflicts with trail users.

Once the perimeter dike road(s) rounds the river bend to the Delaware River side, it takes a jog north and follows a straight route southwest. At this point, the dike road continues around Mud Island. There is a service road that parallels it and the Delaware River but is set back from the river and separated from the dike road by a fence. Although there are several significant historic buildings in this area, there are security concerns because of current National Guard activity and the operations of USACE survey vessels and dredge hoppers along the Delaware riverfront. Access to Fort Mifflin from the USACE facilities is blocked by a security gate and fence.

It is likely that the old Hog Island Road corridor, rather than a riverfront trail around Mud Island, would be most feasible to implement. Dredge disposal cells on Mud Island are likely to be utilized for at least 25 years into the future, thus precluding use of the USACE perimeter dike road(s). This is unfortunate, since the Mud Island facility represents some 400 acres of prime riverfront property on two rivers.

Fort Mifflin is also a potential multi-modal trail connection that can utilize existing river passenger service from Penns Landing. It may be possible to take a bike onto the commercial tour boat, disembark at Fort Mifflin, and continue along the Delaware River portion of the trail, thus bypassing trail use concerns associated with Mud Island and the Schuylkill's west bank. Other considerations for potential trail users would be connections from Fort Mifflin to the Bartram's Garden dock(s) via the Schuylkill River, and a boat connection from Fort Mifflin to historic Red Bank, on the New Jersey side of the Delaware River.

Land Use and Ownership Patterns:

The potential trail corridor along Hog Island Road / New Fort Mifflin Road is a public right-of-way. Bicycle lanes could be developed in existing shoulders (many of which are currently used as de-facto bicycle lanes), with a side path for walkers, hikers, and joggers. The development of side paths may require the acquisition in fee or easement of additional right-of-way. However, as most land use activities along these roadways are set back a considerable distance, such development is possible.

Maritrans operates a tugboat terminal on a 10-acre site that connects to the northern end of Mud Island. Not all the property is clearly fenced or marked, and it is a known EPA designated hazardous waste site. The ownership status of community gardens near Maritrans is also a mystery—several interviews have alternately cited the City of Philadelphia, private owners, or the Philadelphia International Airport as owners.

The USACE represents the largest landowner within this section of the trail corridor, owning considerable frontage on the Schuylkill and Delaware rivers. Within the foreseeable future—at least 25 to 30 years—the Mud Island facility will continue to operate as an active dredge disposal facility, thus precluding the safe use of a continuous perimeter trail along the riverfront. However, should safety and security concerns be adequately addressed and trail use increase along the old Hog Island Road corridor in the future, the potential for some type of spur trail into Mud Island and riverfront access would increase.

2- Fort Mifflin – Essington – John Heinz National Wildlife Refuge at Tinicum and Philadelphia International Airport

Overview

This segment continues the trail along the Delaware River from Fort Mifflin to Governor Printz State Park, utilizing land southwest of the airport that reflects both active industrial uses and quieter, more natural areas. Several on road and off road alternatives were considered in this section of the trail corridor. The trail would enter the community of Essington at the southwest end of the airport, potentially following 2nd and Front streets further south as an on road route, and turning right (west) onto busy Wanamaker Avenue (route 420) to access Morton Homestead State Park and the southern end of John Heinz National Wildlife Refuge at Tinicum

(John Heinz NWR). There are several potential connections from John Heinz NWR to the Philadelphia International Airport. A potential trail corridor within the refuge itself is discussed in the description for trail segment #3, John Heinz NWR to Bartram's Garden via Cobbs Creek Parkway.

The preliminary alignments proposed for the Philadelphia International Airport's runway expansion have the potential to sever the trail loop, disconnecting Fort Mifflin and Philadelphia from Tinicum Township by preventing access to part of the Hog Island Road corridor. The Philadelphia Aviation Division is taking the trail into consideration as the potential runway alignments are developed further.

Alignment Characteristics

Possible Short-term Alignments (On Road):

- *Fort Mifflin to 2nd Street via Delaware Riverfront*

The potential trail route south of Fort Mifflin generally follows a strip of land between the Philadelphia International Airport and the Delaware River, allowing access to attractive river views and potentially to wetlands, a pebble beach, the Hog Island Shipyard remnants, and other interesting natural and cultural features.

The more feasible short-term alignment would follow the reconstructed Hog Island Road southwest around the airport, utilizing the 8-foot-wide shoulders and crossing a bridge over wetlands prior to connecting with 2nd Street in Essington.

Philadelphia Division of Aviation staff have discussed preliminary alternatives for airport runway expansion that could affect the Hog Island trail route, including an alternative that would expand a runway beyond Hog Island Road out onto the Delaware River; however, it is likely that for any alternative an airport service road will be needed in the riverfront area for emergency and maintenance purposes. Consequently, the trail would be able to access the riverfront area and potentially cross to Essington.



Segment 2 Fort Mifflin – Essington – John Heinz National Wildlife Refuge at Tinicum and Philadelphia International Airport

Existing Conditions:

Fort Mifflin Road continues as Hog Island Road as it leaves Philadelphia east of the airport and travels south through Tinicum Township parallel to the west bank of the Delaware River. Hog Island Road, a two-lane highway, is level and at-grade, has wide shoulders for most of its length, and lends itself to the creation of bike lanes. However, for the trail to be truly multi-use, a side path for walkers, hikers, joggers, and other recreational users should be developed either along the road, or even closer to the river.

The public portion of Hog Island Road formerly ended at the southwestern end of the airport adjacent to the United Parcel Service (UPS) facility. Hog Island Road was recently opened beyond the UPS facility and now connects with Tinicum Island Road at the airport, 2nd Street in Essington, and 4th Avenue in Lester in a partial four-way intersection. The former direct connection from Hog Island Road to 2nd Street has been severed for motor vehicle traffic. This spur connection has been gated to prevent commercial traffic from using 2nd Street as a high-speed short-cut through Essington. Motor vehicle access has been redirected onto Tinicum Island Road to head north, although traffic travelling south on Tinicum Island Road can easily access 2nd Street. Hog Island Road now has eight-foot shoulders on either side of the road with the exception of the southwestern end, including the bridge area and junction with Tinicum Island Road. The southwestern end was re-aligned to avoid the airport navigation lights.

Issues related to potential trail use of Hog Island Road include the safety of bicyclists and potential impacts to rare species. Although traffic volume along Hog Island Road is currently light, UPS related traffic may increase now that the southern end of the road is opened, and additional bus traffic is anticipated between Philadelphia and Essington. In addition, Tinicum Township has expressed concern regarding the number of serious accidents that have occurred between motorized vehicles. UPS and other commercial traffic flow is a safety issue for a trail close to Hog Island Road, evidenced by the recent fatalities that have resulted from vehicular collisions on this road. Employees who are late to work and in a hurry to make up lost time surpass the 25 mph posted speed limit. Jersey barriers or other similar obstacles would need to be installed at curves in the road in order to physically separate motorized vehicles from bicyclists and/or pedestrians. In addition, trail use that utilizes the road apron should be avoided between 10:30 p.m. and 3:30 a.m. Monday through Friday, and 4:00 to 9:30 p.m. on Saturdays. These hours reflect the busiest times and heaviest traffic flows for UPS. Restricted hours for trail use should be known and visible to trail users.

Additional challenges for bicyclists include a temporary (six months to one year) "surcharge" under the permanent Hog Island road alignment southwestern end. The surcharge would create a berm of higher elevation that would eventually compact to create a level, horizontal road alignment. Along with a drainage system, this approach would prevent the road from sinking below grade over time; however, it would create a temporarily steeper grade for bicycling.

Another Tinicum Township concern is the wetland/creek crossing at the southwestern extension of the road, which will require extensive coordination with trail development. Wetlands habitat restoration will be undertaken, with the installation of a tidal floodgate to allow flushing of the creek to provide more suitable habitat for the rare threespine stickleback fish. Habitat for the red bellied turtle will also be created. The original design of the bridge crossing in this area has already been narrowed to accommodate these habitat needs. Bicyclists crossing the bridge would need to proceed with caution, perhaps getting off of their bikes and crossing on foot. An off road trail in this area would need to avoid or minimize impacts to these resources.

At and following the bridge crossing, Hog Island Road loses its wide shoulder. The narrow shoulder and poor line of sight in this area due to the curve in the road creates safety hazards

for pedestrians and bicyclists as they approach Tinicum Island Road. In addition, pedestrian and bicycle access to 2nd Street is problematic because of the locked gate, only accessible by emergency vehicles. Pedestrians and bicyclists must access 2nd Street indirectly via Tinicum Island Road or work their way around the emergency gate. The Tinicum Island Road – Hog Island Road intersection is currently unsafe for bicyclists and pedestrians because of the lack of signaling, poor line of sight, and lack of adequate shoulders and missing sidewalks/pedestrian paths on either side of the intersection; however, study team members have observed bicyclists utilizing the narrow roadway in this area. Redesign of the emergency gate and/or provision of a separate pedestrian/bike path along the former 2nd Street short-cut would be necessary to create a safer trail experience.

The Federal Aviation Administration (FAA) expressed concerns about the security of the flight navigation lighting on the southwest end of Hog Island Road. Unauthorized hunting has been a problem, as hunters often take pot shots at the equipment sheds and lights. The airport is concerned that increased visitation by bicyclists and pedestrians using the trail would result in an increase in vandalism of navigation equipment outside of the airport aviation area. Various types of barriers can be constructed to prevent trail access to secure areas. Keeping the trail close to the road would ensure that activity in this area could be more easily monitored.

Regarding potential impacts to airport security in general, the FAA requires a 10-foot-high perimeter fence around secured airport property, and that any right-of-way such as a trail or road be located at least 10 feet from the fence line. This area is to be kept clear of physical obstacles, vegetation, or other objects that may impede sight lines or provide unauthorized access to secured areas.

Land Use and Ownership Patterns:

The few commercial and industrial operations on the Delaware riverfront are largely hidden from view by the tall reed phragmites and other wetland plants lining Hog Island Road. The overall feeling along Hog Island Road is not of heavy industry like the refineries along the Schuylkill, but of an attractive riverfront environment. There are occasional beaches where people can regularly be seen fishing. Along the river below Hog Island Road and the former Conrail corridor, about midway along the Fort Mifflin-2nd Street stretch, can be seen the remnants of the Hog Island shipyard piers and an enchanting wetland cove. Immediately southwest along the riverfront is a protected beach and popular fishing spot. Immediately to the north, following alongside the road, is the airport perimeter fence. Immediately to the south, also parallel to the road, the former Conrail right-of-way continues. This area is very secluded and generally peaceful, with the exception of the airport navigation area. Planes approach the airport very low to the ground, following navigation lights at the southwestern end of Hog Island Road, and the noise from this activity can be substantial.

Along the Delaware River and Hog Island Road, much of the proposed trail route is within public right-of-way. The northern section just south of Fort Mifflin is owned and managed by the City of Philadelphia, while the remainder of Hog Island Road adjacent to the Philadelphia International Airport is owned and managed primarily by Tinicum Township. Part of the Hog Island -Tinicum Island Road right-of-way is owned and managed by the Philadelphia Industrial Development Corporation (PIDC). Improvements to the southwestern end of Hog Island Road would therefore need to be coordinated among PIDC, Tinicum Township and potentially the City of Philadelphia. A noticeable change in the road conditions occurs between the city managed and the township managed sections. The Philadelphia portion has narrow shoulders currently that are undergoing reconstruction – the airport perimeter fence has been moved further away from the road and water supply lines have been added between the fence and the road. The

Tinicum Township portion includes paved shoulders 8 feet in width throughout most of its length.

Land ownership between Hog Island Road and the Delaware riverfront is complex. Several river-related industries are located along the riverfront on the south side of the road, such as an off-loading site for tankers, and a launch for taking pilots out to large vessels. Access is also given to the major UPS facility, as well as to airport facilities. Property boundaries would need to be determined.

Sun Oil appears to own riverfront property west of Fort Mifflin and south of Hog Island Road. This area extends to a cove and artificial wetland pond created as mitigation for airport development. The Philadelphia Division of Aviation Administration owns this and another mitigation site further southwest, on the Tinicum Township side of the airport. In fact, many of the properties south of Hog Island Road appear to be owned by the Division of Aviation Administration. Riverfront parcels have become valuable as wetland mitigation sites—in addition to the airport, certain developers are eyeing these parcels as potential mitigation sites. The airport has no other plans to relocate facilities or build on the riverfront parcels, although some of the riverfront remains developable land. Tinicum Township has shown interest in possibly locating a number of businesses to the riverfront; however, more recently, the township received a \$300,000 grant from the Pennsylvania Department of Conservation and Natural Resources to acquire a 133-acre riverfront parcel southwest of the airport for the purpose of river conservation and habitat protection.

Illegal dumping has occurred in the past along the riverfront, with contractors carting roofing and other materials there. Cars stolen from airport parking lots sometimes ended up in the riverfront wetlands, in isolated areas used infrequently by recreationists. These illegal activities have decreased in recent years because of the increasing recreational and commercial activity along Hog Island Road, relating in part to expansion of airport activities. Developing the trail and opening up Hog Island Road to through traffic should lead to a further decrease in illegal activities, because of the increased presence of recreational users and airport employees who could monitor and report such uses to the appropriate authorities.

- *2nd Street to Governor Printz Park*

The character of the trail corridor changes considerably in the section of Second Street that connects to Tinicum Island Road. The narrow tree lined street gives way temporarily to commercial uses such as car rentals related to the airport. 2nd Street in this section has narrow shoulders but a relatively low volume of traffic and low posted speed. The trail user would follow 2nd Street west to Poulson Avenue, turning left onto Poulson to connect with Front Street in Essington.

Front Street has a relatively low volume of traffic and quiet, residential streets with wide shoulders, although motor vehicles are occasionally parked in the shoulders. The street is suitable for bike use, and sidewalks on both sides of street make this corridor suitable for walkers and joggers. There are views of the Delaware River and dead end spurs for riverfront access which present some interesting opportunities for scenic/interpretive turnouts. Front Street dead ends at LaGrange Avenue and the north end of the Lazaretto, so bicyclists and pedestrians must follow LaGrange back to Second Street.

The trail route would continue on road along 2nd Street southwest through the community of Essington, passing the historic Lazaretto quarantine station and continuing to Corinthian

Avenue to access Governor Printz State Park. A riverfront trail route to the southeast of 2nd Street was not investigated.

Existing Conditions:

Front and 2nd streets have a relatively low volume of traffic, and wide shoulders in which motor vehicles occasionally park, making them relatively suitable for bicycle use. Sidewalks on both sides of the street make these corridors suitable for walkers and joggers as well. Front Street has a quiet, residential character. 2nd Street is also relatively quiet and mainly residential in character, except for its northern end, where residences give way to some commercial development near the junction with Tinicum Island Road. At this end there is no sidewalk and a narrow shoulder; however, the shoulder could be widened and “share the road” signs installed for bicyclists. Separate pedestrian accommodations would need to be considered.

Land Use and Ownership Patterns:

Once Hog Island Road connects to 2nd Street in Essington, the character of the trail corridor changes to a quiet, residential area with some limited commercial activity. Several businesses and marina operations exist along the riverfront south of 2nd Street. Recreational boating on the Delaware is popular, with people picnicking at Governor Printz State Park or on Little Tinicum Island, a State Forest.

Some riverfront wetlands to the southwest of the airport were formerly owned by Westinghouse Corporation and were recently purchased by Tinicum Township. These are not slated for development, although plans have been put forward in the past. The former Westinghouse properties are part of the Tinicum Industrial Park—areas north of 2nd Street are in active use for warehousing. Westinghouse owns large parcels southwest of the airport in Tinicum Township. These parcels extend to the Delaware riverfront below 2nd Street.

Henderson, a real estate development corporation, owns large tracts of land—more than 100 acres—just west and south of Tinicum Island Road, below U.S. Fish and Wildlife Service property. Some of the property west of Tinicum Island Road is being developed for industrial use.

In Essington, trail development will most likely occur using public rights-of-way through this residential section. Residents and businesses should be involved so that there is general approval for locating, signing and landscaping of the trail.

- *Governor Printz State Park to Morton Homestead State Park and John Heinz NWR via Route 420*

From 2nd Street, the trail could utilize Wanamaker Avenue (Route 420) to cross Route 291 and I-95. Route 420 accesses the southern entrance to John Heinz NWR. There are several trails within the refuge, many of them not accessible to bikes. Route 420 narrows once I-95 is crossed, losing shoulder space at the bridge crossing over Darby Creek, although there is a pedestrian walkway. The trail would continue over the bridge and users could enter Morton Homestead State Park. Improvements to the creek landing at this site could make it accessible to boaters. Further downstream in Ridley Township, Leedom Estates Park and an adjacent apartment complex provide additional opportunities for waterfront access. The Morton Morton

House in Norwood Borough is not directly accessible from the proposed Tinicum-Fort Mifflin Trail. Interpretive signage on the south side of Darby Creek, from which the Morton Morton House is visible, is recommended. Possible future access to the Morton Morton House may occur through John Heinz National Wildlife Refuge. Ownership of the land along Darby Creek is being determined, with the possibility of inclusion into the refuge. The Darby Creek Canoe Trail, for which a brochure is currently published, can provide visual access to the house; however, development of physical access to the house from the creek should be explored with Norwood Borough. Darby Creek is navigable at high tide from its mouth north to Darby Borough.

Existing Conditions:

The shoulder of Route 420 is wide; however, there is a relatively high volume of traffic traveling at high posted speeds as compared to in-town traffic. The main concern is the safety of pedestrians and bicyclists attempting to cross 291 and I-95. Prior to the construction of I-95, one could walk easily along Wanamaker Avenue to Darby Creek; however, the massive Route 420 interchange was constructed with no thought given to bicycle and pedestrian use. A series of ramps merging into the Route 420 interchange create hazardous conditions for bicyclists and pedestrians.

The trail offers the possibility of reconnecting the sidewalk system of Essington with the sidewalk on the Darby Creek Bridge, and giving safe bicycle-pedestrian access from Essington to John Heinz NWR. A bicyclist/pedestrian bridge may be required southeast of I-95 for access to John Heinz NWR. Similar interchanges with I-95, such as along the George Washington Parkway just outside Washington, D.C., have been enhanced by the Mount Vernon Trail, and similar construction is possible along the trail in Tinicum Township. The Industrial Heritage Parkway plan for Route 291/13 recommends a pedestrian-friendly connection over I-95 to the John Heinz National Wildlife Refuge.

Routes 420 and 291 are controlled by PennDOT; improvements for trail use through the I-95 Interchange should be developed in coordination with PennDOT, the Delaware County Planning Department, Tinicum Township, and the City of Philadelphia Division of Aviation Administration.

- *Route 291 corridor connection from Route 420 to Philadelphia International Airport*

Planned improvements to Route 291 may make this corridor viable for trail use in the long-term, from Wanamaker Avenue (Route 420) to Philadelphia International Airport. Potential connections between the trail, the airport, and John Heinz NWR already exist and can be implemented in the short-term. One such connection is the “tunnel” under Route 291 and I-95 from a parking lot at International Plaza that accesses the northern end of the wildlife refuge; however, the USFWS has noted that this passage has sometimes been flooded. A more viable option is to use the former trolley bed near Scott’s Way, north of the bulge in Tinicum Island Road. This passage under Route 291 and I-95 connects an isolated portion of the wildlife refuge south of 291 with the impoundment loop trail within the main refuge. Because of the reconfiguration of the road system to accommodate airport expansion, there is the possibility to use Route 291 to access the airport, as described below.

Possible Long-term Alignments (On/Off Road):

- *Fort Mifflin to 2nd Street via Delaware Riverfront*

Option #1:

The long-term trail route southwest of Fort Mifflin could potentially include an off road path paralleling Hog Island Road.

Option #2:

Rather than using the Hog Island Road corridor, an off road path could parallel the adjacent rail bed, possibly utilizing a dirt maintenance road between the tracks and the Delaware River.

Existing Conditions:

The long-term trail route south of Fort Mifflin could potentially include an off road path paralleling Hog Island Road or an off road path paralleling the adjacent rail bed, possibly utilizing a dirt maintenance road south of the tracks. Philadelphia International Airport staff have discussed possible airport expansion with new runways, but have indicated that a riverfront trail could be incorporated with a new service road along the River.

Currently, the rail service road is a narrow dirt/gravel path overgrown with vegetation in some sections; however, it could be upgraded for trail use if re-graded and cleared of vegetation.

Hog Island Road is paralleled by a freight railroad that enters from Essington, currently passes Fort Mifflin to the northeast, and ends at an oil terminal just north of the Platt Bridge. A rail-trail or rail-with-trail would need to consider airport navigation security issues at the southwestern end of Hog Island Road, as well as potential impacts to rare species and wetlands, and whether or not the location of the rail corridor would make it feasible to connect the trail with Hog Island Road at this end. The possibility of a riverfront trail paralleling 2nd Street to the south should be investigated. The rail line—once part of the Reading Chester & Philadelphia Branch—or parts of it may continue southwest along the Delaware riverfront towards Chester.

Land Use and Ownership Patterns:

The former Conrail right-of-way that parallels Hog Island Road constitutes a 66-foot easement with tracks more or less centered within the right-of-way. A service road along the rail line is poorly maintained in some sections but could be useable as a trail if cleared, re-graded and surfaced with appropriate materials. The rail line has been converted by CSX and Norfolk Southern as a shared asset in joint ownership. This rail line will continue to be actively used for the foreseeable future to transport fuel oil to Sun Oil facilities next to Harkness Point and across the Schuylkill River on the east bank. In addition, sludge from the Southwest Pollution Control Plant is occasionally transported to other parts of Pennsylvania and West Virginia using the rail line. Although active, the rail line is only used currently about once per day. No specific safety or security concerns regarding potential rail-with-trail use have been expressed by adjacent landowners such as Philadelphia International Airport.

Should the railroad, or a portion of the line, ever be abandoned, it would be an ideal candidate for a rail-trail. Even if it is not abandoned, there is the potential to clear and re-grade associated

maintenance roads adjacent to the rail line for use as a “rail-with-trail.” Such trails along active rail lines have been accomplished successfully in several states. Rail corridor ownership and ownership of adjacent lands would need to be investigated further, particularly if access for recreation is envisioned at key riverfront sites.

A riverfront trail would be more attractive than a shared road facility. As land is redeveloped and river access is no longer required, acquisition of title in fee or easement should be investigated. Also, if the rail line is ever discontinued, “rail-banking” should be investigated for the development of a rail-trail.

- *2nd Street to Governor Printz State Park*

The trail route would likely continue on road along 2nd Street south through the community of Essington, passing the historic Lazaretto quarantine station and continuing to Corinthian Avenue to access Governor Printz State Park. The possibility of a riverfront trail route paralleling 2nd Street to the south should be investigated. See *“Existing Conditions”* and *“Land Use and Ownership Patterns”* under previous description of on road trail segments.

- *Route 291 corridor connection from Route 420 to Philadelphia International Airport and John Heinz National Wildlife Refuge*

From 2nd Street, the trail could utilize Wanamaker Avenue (Route 420) to cross Route 291 and I-95, as described previously for the short-term, on road trail alignment, and to access John Heinz NWR and Morton Homestead State Park. The main difference from the previously described on road corridor would be the long-term improvements to Route 291, envisioned to eventually have a separate off road bicycle facility. Route 291, utilizing the connection with Route 420, could become part of the Tinicum-Fort Mifflin Trail and lead directly into Philadelphia International Airport, provided safety and security concerns are addressed. Additional trail connections from 2nd Street to Tinicum Island Road were also investigated. Route 291 connects to Bartram Avenue on the northwest side of the Philadelphia International Airport. Following City Bicycle Network segments—Bartram Avenue, 84th Street, and Lindbergh Boulevard—allows a trail connection to the northeastern end of John Heinz National Wildlife Refuge.

Existing Conditions:

Delaware County has completed a study of enhancements to the Route 13/291 corridor – Delaware County Industrial Heritage Parkway: Route 291/13 Beautification and Greenway Plan. As part of the Route 291/13 corridor improvements, a multi-use path for bicyclists, pedestrians, and rollerbladers is planned along Route 291; a bicycle route is also planned for Route 420 from Prospect Park to allow residents to bicycle to Route 291 and the Morton Homestead State Park and John Heinz NWR. Other planned improvements include landscaping on both sides of the street; a unified system of interpretive signs to highlight historic and environmental points of interest; and a unified system of directional signs to connect the corridor with nearby attractions, parks, riverfront access points, business parks and public transit. Specifically, the off road bike/pedestrian facility between Route 420 and Jansen Avenue would use the median between Route 291 and Powhatan Avenue, which parallels 291. Tinicum Township has requested that Powhatan Avenue east of 420 be reconstructed as a one-way street to permit diagonal parking

that can allow customers to better access businesses fronting this street. The Industrial Heritage Parkway plan recommends that the entire right-of-way between the northbound shoulder of Route 291 and the far curb of Powhatan Street northbound be reconstructed to accommodate landscape verges, one-way trail segments, parallel parking, and a reduced travel lane.

Beyond Jansen Avenue, the Industrial Heritage Parkway plan suggests an on-street trail alignment because there is not adequate right-of-way for separate bike lanes. The on-street facility would include a "Share the Road" policy for both one-way portions of Route 291 through Lester and reduction of the speed limit from 35 to 25 mph to respect the residential quality of the community.

Tinicum Township has applied for Congestion Mitigation Air Quality funding for signal improvements and signage for the 291 corridor. The township has also agreed to donate land for the off-road segment of the corridor between 4th Avenue and Route 420. The Tinicum-Fort Mifflin Trail could take advantage of these improvements along Route 291 to reach the entrance to Philadelphia International Airport in the vicinity of Bartram Avenue, where a side path into the Arrival/Departure area has been reviewed with airport officials. Creating a side path along Route 291 may require some additional right-of-way or easements negotiation.

The airport is undergoing significant redevelopment (completion date scheduled for Summer of 2003), which includes new entrance ramps from I-95, construction of new hangars and terminals, and reconfiguring of airport roads and wetlands. The most promising route to provide access to and from the airport from the trail is Route 291 exiting onto the airport arrivals road for a few hundred yards, then merging onto the northernmost road that leads to the parking garages and car rental centers. Many properties are set back and allow, with possible expansion of the public right-of-way, for the construction of a landscaped side path immediately north and adjacent to the arrival and parking lot roads. A formal crossing would need to be installed, including a signal, bridge, or stop sign and crosswalk, in order to get trail users from the north side of the road to the parking garages/lots and airport terminals on the south side of the road.

Trail users could access the terminals and facilities inside the airport from the parking lots by crossing at existing continental crosswalks that lead from the terminal parking lots into the terminals themselves. Parking for bicyclists could be located within the existing parking lots for the terminals. Negotiations would be needed with the Philadelphia Parking Authority because this agency manages all parking at the airport.

Tinicum Island Road, which connects to 2nd Street in Essington, and the airport's Cargo City Service Road, were evaluated as a potential trail route into the airport. While these roads could potentially accommodate an on road bike facility for Cargo City employees, airport officials felt that the relatively high volume of commercial traffic and the roads' use as airport service roads may preclude their use for trails. Cargo City employees have been observed jogging and walking along Tinicum Island Road and the Cargo City Service Road. Security concerns may dictate the erection of a gate and fence where Tinicum Island Road meets 2nd Street, thus precluding trail access or egress from the Cargo City area. The Industrial Heritage Parkway plan does suggest, however, that Tinicum Island Road, which contains 18-foot travel lanes, could be re-stripped to provide 5-foot bike lanes. Currently, Tinicum Island Road does include narrower shoulders. This road has a relatively high volume of traffic, although the posted speed is only 35 mph. Providing safety and security issues are addressed, this road segment could connect the Hog Island Road portion of the trail with Route 291 and the John Heinz NWR via the underground passage just south of Scott Way.

Once exiting the airport area, Route 291 connects with Bartram Avenue in Philadelphia, which currently includes bicycle lanes on both sides of the road; however, the intersection is currently hazardous for bicyclists because there is no shoulder on the left of 291. Therefore, the bicyclist must either cross two lanes of traffic from the right hand shoulder or ride in high-speed traffic using the left lane. A separated path along Bartram Avenue has been suggested. This path could provide access to the trail for short-term and long-term residences and hotels on the east side of Bartram Avenue. The current bicycle lanes will become an extension of the Cobbs Creek Trail being developed by the Fairmount Park Commission through this commercial area; however, sidewalks are missing, and must be developed for walkers/hikers/joggers. The airport connection to Eastwick Station and the R1 SEPTA line has been described previously under Segment #1, Bartram's Garden to Fort Mifflin.

Bartram Avenue connects with 84th Street. Although part of the City Bicycle Network, this street does not include separate bike lanes currently. It does include a wide shoulder in each direction along with "Share the Road" signs. In addition, there are sidewalks for pedestrians and a separate side road that parallels the north side of 84th Street and accesses local businesses and a middle school. This road appears to be underutilized and provides the possibility of a separate landscaped multi-use path, particularly if the road width is narrowed and/or the median separating it from 84th Street is utilized. In fact, the Philadelphia Streets Department plans to develop bike lanes along 84th Street in 2004.

The trail could turn south from 84th Street onto Lindbergh Boulevard. On its southern end, Lindbergh Boulevard has wide lanes and a wide shoulder, no trolley, and a low volume of traffic that makes it suitable for bicycling with few improvements. The right-of-way is likely wide enough to create a separate multi-use path. Lindbergh Boulevard dead ends into the main entrance to the wildlife refuge on its northeastern end.

Land Use and Ownership Patterns:

Off road bicycle/pedestrian facilities would be required along Route 291/Powhatan Street as far east as Jansen Avenue. The right-of-way for this state route is owned and managed by PennDOT. The off road facility would involve the reconstruction of existing right-of-way to restore its boulevard character and therefore would not require acquisition of or easements on adjacent private property.

Land use in the section of Route 291 from Route 420 to Jansen Avenue is related to its wide highway dimensions and traditional industrial and commercial uses, which continue along this corridor from Eddystone into Philadelphia. A concrete highway median adds to the hard-edged industrial character. This stretch of highway also includes residential sections set back from the highway - Essington to the south below Powhatan Avenue and Lester to the north of 291. Adjacent to the Routes 420-291 intersection is Manor Field Recreation Area. Trail access may be possible to link this recreational facility to the Tinicum Township communities and possibly to John Heinz NWR via a pedestrian bridge over the 420-291 intersection. Easements or acquisition of private property north of the Recreation Area may be needed for developing a trail and/or pedestrian bridge.

Powhatan Street, which parallels 291 to the south, was once the community's "Main Street," and many popular businesses persist, such as the Preston Diner. PennDOT has proposed to reconstruct the section north of Route 420 from a two-way to a one-way street, with a 20-foot travel lane and an expanded median near the signaled intersection. Delaware County's Industrial Heritage Parkway plan proposes instead to reconstruct the right-of-way between the northbound shoulder of 291 and the northbound curb of Powhatan Street to accommodate

landscape verges, two one-way trail segments, parallel parking, and a reduced travel lane. This approach would recreate Powhatan as a pedestrian and bike-friendly Main Street, and calm traffic on 291. Close coordination among Delaware County, Tinicum Township and PennDOT will be needed to ensure that a separate multi-use trail can be safely accommodated along Route 291/Powhatan Avenue.

Powhatan Avenue dead ends at Jansen Avenue and resumes a couple blocks south of the south lane of 291, past the Westinghouse Electric Corporation property. Powhatan Avenue then dead ends again near the Airport Business Center. The trail is proposed to utilize the two one-way sections of Route 291 beyond Jansen Avenue. Here a split occurs between the two sections of Route 291 until they rejoin at Exit 10 of I-95 near the Airport Business Center. Route 291 is one way north and one way south through Lester. Each one-way section contains two travel lanes that pass through a residential community with front porches, landscaped yards, and sidewalks. After the sections are re-united, Route 291 travels through wetland remnants of the John Heinz National Wildlife Refuge. It then becomes a highway again as it approaches the Philadelphia International Airport, passing Cargo City and the International Plaza on the south side of 291. The proposed trail would consist of an on road facility north of Jansen Avenue to Bartram Avenue. Coordination with PennDOT, Delaware County and Tinicum Township will be necessary to implement a "Share the Road" policy for bikes, reduce the speed limit, and introduce signaling where appropriate.

Coordination between PennDOT and the Philadelphia Streets Department would be needed to make safety modifications to the 291-Bartram Avenue intersection. Should the trail follow Bartram Avenue, 84th Street and Lindbergh Boulevard as an on road facility and part of a public right-of-way, no acquisitions or easements would be required. The Philadelphia Streets would be responsible for any additional striping or signaling that may be necessary. A separate multi-use path along Bartram Avenue would require the consent of landowners, mainly airport related businesses such as hotels, and acquisitions or easements. Existing right-of-way could likely be utilized to create a separate multi-use path along 84th Street and/or Lindbergh Boulevard.

3- John Heinz NWR to Bartram's Garden via Cobbs Creek Bikeway

Overview

The trail would generally follow the Darby/Cobbs Creek valley along the boundary of Philadelphia and Delaware counties, linking several areas of existing parkland, as well as historic sites. The trail segment connects John Heinz NWR with Cobbs Creek Parkway, follows the Parkway north through west Philadelphia, and then uses an on-road east-west route to get back to Bartram's Garden and complete the trail loop. Trail connections from Cobbs Creek on the Philadelphia side into Delaware County are beyond the scope of this study; however, there are several possibilities to provide enhanced access to Cobbs Creek for Delaware County residents from City Line Avenue south to John Heinz NWR. Some of these linkages are noted below and should be explored further by the Fairmount Park Commission and Delaware County Planning Department in developing the Cobbs Creek Bikeway.

Trail segments within John Heinz NWR would be determined primarily by wildlife management needs, and would stay away from sensitive habitat areas, most likely utilizing a path paralleling the I-95 corridor. The east-west route from Cobbs Creek Park to complete the trail loop would occur at the narrowest part of West Philadelphia, where Cobbs Creek and the Schuylkill River

are less than two miles apart. In this area the trail would follow portions of the Philadelphia Bicycle Network to link Cobbs Creek Park with Bartram's Garden and the Schuylkill River Trail. This trail segment is primarily characterized by residential communities in southwest and west Philadelphia. Connections to University City via the City Bicycle Network and the Botanic Trail would make the trail available to the students, faculty and staff of Drexel University, University of Pennsylvania, and University of the Sciences.

Alignment Characteristics

Possible Short-term Alignment:

- *John Heinz NWR trail(s) northeast to Lindbergh Boulevard*

The trail would access the southwestern end of John Heinz NWR from Route 420, following one of two pre-existing refuge trail systems. The potential bike trail parallels I-95, while the more sensitive dike trail system, for pedestrian use only, primarily follows Darby Creek to the west.

The designated multi-use/bikeway trail segment would likely include an historic trolley corridor which runs parallel to I-95, in order to avoid disturbing wildlife. This route runs past an observation blind and marsh restoration project to the west after crossing a tributary to Darby Creek. Approximately 1 ½ miles into the refuge the multi-use trail joins up with the second trail system, proceeding past the tidal marshes associated with the confluence of Darby and Hermesprota creeks. Proceeding about ¼ of a mile, the trail user would come to a fork in the trail.

Option #1:

The trail user would have the choice of continuing the trail adjacent to I-95 and Bartram Avenue, looping northwest around the impoundment and heading toward the Cusano Environmental Education Center. A spur less than ¼ mile west from the fork in the trail systems could allow passage south under I-95 and Route 291, with the option of accessing additional US Fish and Wildlife Service property just north of Tinicum Island Road, or accessing Route 291 into Philadelphia International Airport. *The latter two options are described in the previous section under trail segment #2.*

Option #2:

Provided wildlife management concerns are met, and the condition of the existing trail upgraded for bicycle use, the trail user may be able to follow a dike trail through the tidal marshes and along the western edge of an impoundment along Darby Creek. The trail would then loop south toward the Cusano Environmental Education Center. If wildlife protection concerns cannot be met on the dike trail, the Trail could be located on the existing service road closer to I-95, and then travel via existing connecting gravel roads to the Cusano Center.

Under either option #1 or #2, the trail user ends up at the northeastern boundary of the refuge and the Cusano Environmental Education Center.

Existing Conditions:

A well-developed trail system already exists within John Heinz NWR. A narrow gravel road traverses a dike along Darby Creek throughout most of the length of the refuge, allowing access to the tidal marshes and views of associated wildlife. This portion of the trail system, which accesses sensitive areas, is in poor condition and most sections are not suitable for bicycle use. In places this dike trail is considerably narrower than the minimum 6 feet necessary for a bicycle path. The narrow width and overgrown sections create a poor line of sight that makes them unsafe for bicyclists. The dike trail would need to be cleared of vegetation and graded, if it is anticipated that any sections are to be used as a bike path. Placement of rip-rap is necessary in some areas to control the tremendous wind-driven erosion of the banks.

An interconnecting trail system to the southeast generally parallels the I-95 corridor. The latter includes a dirt surface and is overgrown in some sections. It is not currently suitable for bicycle use, but could be upgraded through re-grading, vegetation removal, and re-surfacing with appropriate materials such as crushed stone. Use of asphalt and other impermeable surfaces, which would affect water quality and the biological integrity of the refuge, should be avoided.

The Refuge Manager has expressed concern that trail use not interfere with wildlife or recreational users on foot. Thus it is likely that any improvements for bicycling would primarily utilize an existing service road adjacent to I-95 in Tinicum Township rather than the Darby Creek dike road. The larger gravel dike road in the refuge's Philadelphia section could be accessed by bicycle as well as on foot. Walker/hikers would always have the option of following the more scenic but sensitive route along Darby Creek in Tinicum Township. Another potential bike/ped route through the refuge includes a rail-trail along the former Chester Short Line.

Other issues related to potential trail use have been raised for the wildlife refuge. The Darby Creek dike trail in particular is abused from the impacts of bikers, particularly mountain bikes and large tour groups that fly through without coordinating with refuge staff. Issues of biker etiquette have been raised, including insensitive biker behavior toward other user groups such as birders, unsafe bicycling speeds on the trail, and ignorance of proper waste disposal.

Other issues include access to discontinuous units within the refuge that have been cut off by Route 420, I-95, Bartram Avenue and Route 291; design and location of the trail alignment to minimize or avoid unauthorized access by ORVs at the southwestern and northeastern entrances; and potential safety hazards from the presence of the former Folcroft Landfill within the refuge as well as the Clearview Landfill outside refuge boundaries. These two sites form the EPA designated Lower Darby Creek Area Superfund Site.

A passage beneath I-95 and 291 would allow pedestrian and bike access to the refuge. The passage links refuge trails with a parking lot adjacent to the only parcel of refuge land below 291. The parking lot, located just west of Scott Plaza near the Radisson Hotel, is now gated and closed because of problems with illegal dumping. Past mitigation related to airport projects affecting wetlands involved a proposal to construct a walkway under I-95, a proposal which can now be resurrected as part of the trail development process.

There is an additional U.S. Fish and Wildlife Service tract of land between Bartram's Avenue and I-95. It has been owned for only a few years and currently closed to the public. The pond within this triangular wedge of land has been a popular fishing spot in the past, but is currently inaccessible to the public. There is no trail access from the refuge and there is no shoulder for parking along Bartram Avenue. Current bike lanes along Bartram Avenue may make this area more attractive to recreational users and possibly entail the creation of a bike parking facility and/or dock.

The EPA designated Lower Darby Creek Area Superfund Site in and/or near the refuge is being studied and monitored by the US EPA. Refuge staff assert that current trails within the refuge do not place any recreational users in contact with contaminated water or soil.

Opportunities to utilize Darby and Cobbs creeks as part of a water trail system should not be overlooked. At high tide, the lower portion of Cobbs Creek from Darby Borough south to the Darby Creek, and the lower portion of Darby Creek, is navigable by boat. A public park at Yeadon Borough along Cobbs Creek, off of McDade Boulevard, may be an appropriate canoe launch/take-out site. Canoeists may travel upstream to this site from the John Heinz NWR. The park at Yeadon Borough is across the creek from the Blue Bell Inn.

Land Use and Ownership Patterns:

Within the 1200-acre John Heinz NWR, land and facilities are under the management of the U.S. Fish and Wildlife Service; however, a total of four companies are involved in negotiations and management issues pertaining to the refuge entrance off of Route 420. There is a multi-pipeline easement at the southwestern entrance to the refuge, adjacent to Route 420. At the same entrance, the proposed trail splits and runs along the southern portion of the refuge above I-95. Tinicum Township owns the access along I-95, while PennDOT controls the remainder of the right-of-way. The complexity of these easements and rights-of-way must be considered as part of trail development. Trail implementation would be coordinated with the refuge management as well as PennDOT and Tinicum Township.

- *Lindbergh Boulevard to Cobbs Creek Park at 70th Street*

The proposed trail would exit the refuge at 86th and Lindbergh Boulevard, following Lindbergh Boulevard north to 82nd Street to connect to an off-road segment of Cobbs Creek Bikeway or north to 80th Street to connect to on-road segments. Cobbs Creek Park begins at Woodland Avenue, and extends north all the way to City Line Avenue at the Philadelphia/Montgomery County border. There are several opportunities for Delaware County residents to access the Cobbs Creek Bikeway, utilizing existing roads that cross Darby and Cobbs creeks. The Darby/Cobbs crossings relevant to the Tinicum-Fort Mifflin Trail study area are identified below.

Option #1:

Currently, the Cobbs Creek Bikeway is planned to be on road from 86th Street north to 70th Street, rejoining Cobbs Creek Park at 70th Street and Chester Avenue to avoid restricted access at an underpass. The short-term on-road route is planned to head north as follows: 80th Street – Buist Avenue – 77th Street - Elmwood Avenue — 70th Street to Cobbs Creek Parkway. The Cobbs Creek Bikeway connects with 84th Street, which includes a bridge crossing over Darby Creek into a residential community in Darby Township, Delaware County. 84th Street becomes Hook Road in Delaware County. This crossing provides an opportunity for residents of Delaware County to access the Bikeway and the Tinicum-Fort Mifflin Trail.

The short-term on road route for the Cobbs Creek Bikeway unfortunately bypasses the historic Blue Bell Inn at Woodland and Island avenues as well as one of the few bridge crossings into Delaware County from southwest Philadelphia. However, access to the Inn via Woodland Avenue is a possibility. Woodland has been designated part of the City Bicycle Network.



Segment 3 John Heinz NWR to Bartram's Garden via Cobbs Creek Bikeway

In addition, Island Avenue accesses the Inn and has been evaluated as a “Bike Friendly Street.” The Blue Bell Inn has been identified as an important heritage resource and a potential interpretive node for the Tinicum-Fort Mifflin Trail and Cobbs Creek Parkway. The nearby bridge crossing occurs at Woodland Avenue, which heads west to become Main Street in Darby Borough, Delaware County.

Option #2:

A variation on option #1, this route follows the temporary, on road Cobbs Creek Bikeway for most of its length. However, instead of heading north on Elmwood Avenue to 70th Street, option #2 heads north on Elmwood only to 76th Street, turns right onto 76th Street, then heads north on Buist Avenue, thus bypassing the hazardous five-point intersection at Island and Elmwood avenues. The trail user would continue to 70th Street to re-connect with the Cobbs Creek Bikeway.

Similar to option #1, this route would bypass the Blue Bell Inn and the Woodland Avenue bridge crossing into Darby Borough. Also similar to option #1, this route provides access for Delaware County residents via the 84th Street bridge crossing over Darby Creek.

Option #3:

Exiting the refuge, the trail could follow Lindbergh Avenue north to 84th Street, (using the existing bike lanes of the Philadelphia Bicycle Network), and then continue east to Bartram Avenue. Continuing east on Bartram Avenue, the trail user can then rejoin trail segment #1 (Bartram’s Garden to Fort Mifflin) via Essington Avenue. Alternately, the trail user could follow Lindbergh Boulevard north all the way to Bartram’s Garden. This option would bypass Cobbs Creek Park altogether. This option may be preferred for utilitarian trail users. Similar to options #1 and #2, this route would provide Delaware County residents with access to the trail via the 84th Street bridge crossing over Darby Creek. This route would not incorporate the Woodland Avenue bridge crossing over Cobbs Creek into Darby Borough, Delaware County.

Option #4:

Rather than exiting the refuge via Lindbergh Boulevard, the trail user could access another link to the northeastern end of John Heinz NWR—the abandoned trolley corridor that runs parallel to Bartram Avenue from 86th Street to the refuge. The trail could then continue on road east along Bartram Avenue, rejoining trail segment #1 (Bartram’s Garden to Fort Mifflin) via Essington Avenue. Alternately, the trail could continue west on 84th Street to join Lindbergh Boulevard and the temporary on road route for the Cobbs Creek Bikeway. Similar to options #1, #2, and #3, this route would not incorporate the Woodland Avenue bridge crossing over Cobbs Creek into Darby Borough, Delaware County.

Option #5:

The trail could follow Lindbergh Boulevard north to 82nd Street, then head west on 82nd Street to take advantage of a pre-existing asphalt path within parkland adjacent to Darby Creek’s east bank. The path and parkland, identified as part of the long-term Cobbs Creek Bikeway route, extends as far north as 77th Street, where it becomes part of Eastwick Park. The path is located adjacent to the Korman Homes at 78th and Saturn Place, and could allow these residents off road access the wildlife refuge in the future. The trail user could then pick up the temporary on-

road route for the Cobbs Creek Bikeway at 77th Street, continue west to Elmwood Avenue, and northeast to 70th Street. This route would provide Delaware County residents with access to the trail via the 84th Street bridge crossing over Darby Creek. This route would not incorporate the Woodland Avenue bridge crossing over Cobbs Creek into Darby Borough, Delaware County.

Existing Conditions:

The proposed trail would exit the refuge at 86th and Lindbergh Boulevard, remaining on road to follow Lindbergh Boulevard to at least 82nd Street. The section of Lindbergh below 80th Street, unlike northern sections, does not include trolley tracks, and the traffic volume is fairly low. In addition, there are relatively wide shoulders, although cars are often parked in them. These factors make the route more “bicycle friendly.” Exiting Lindbergh at 84th Street and connecting to Bartram and Essington avenues would provide yet another alternative route for bicyclists who want to head north to University City or Center City.

For a calmer, more scenic experience it is possible to utilize a segment of the Cobbs Creek Bikeway that has been designated as the long-term, off-road route. This 5-block segment extends along Darby Creek’s east bank between 77th Street and Eastwick Park to 82nd Street (Angelo Place), where it dead ends just north of John Heinz National Wildlife Refuge. This off-road alternative provides trail users with a level, even asphalt surface approximately eight feet wide. This trail segment can be accessed via 77th Street, where the trail user can take a short cut through the Cibotti Recreation Center basketball courts and across a field to 78th and Saturn Place. With a few minor improvements such as signage, this off road segment could link to both 82nd and 77th streets.

Lindbergh Boulevard and 70th Streets have been evaluated as potential Philadelphia Bicycle Network routes; however, no improvements have yet been implemented for bicycle use. Island Avenue north of I-95 to Blue Bell Inn has been designated a “Bicycle Friendly Network Street” by the Philadelphia Streets Department, meaning that the route is rated above average for cycling although it does not have bicycle lanes. Woodland Avenue includes bike lanes in some sections as part of the Philadelphia Bicycle Network—striping and signage are anticipated for the section between 70th and Island Avenue in 2004. Bartram and Essington avenues are both identified as sections of the Philadelphia Bicycle Network.

Bike lanes in the southern section of Cobbs Creek Bikeway would be designated on city streets using pavement markings and signs. Bicycle lanes would be five feet wide, safely accommodating uni-directional traffic next to motor vehicles.

There are a number of safety issues for users of the temporary on road Cobbs Creek Bikeway route. Instead of remaining in the park with one intersection, the proposed route runs across eight major cross streets (Chester, Kingsessing, Greenway, Woodland, Paschall, 71st, 72nd, 73rd). The five-point intersection where Elmwood, Passyunk and Island avenues meet would be relatively dangerous for bicyclists crossing the intersection. Both Elmwood and 70th Street have parking on both sides of the street, with the added obstacle of the east and west bound #36 subway-surface streetcar. Elmwood Avenue between Lindbergh Boulevard and 58th Street is scheduled for striping and signage improvements later in 2003. At 70th Street, bicyclists and pedestrians would encounter a steep hill instead of remaining in the park, where the grade is consistent.

Buist Avenue (see option #2) would provide an alternative route for trail users wishing to avoid the five-point intersection. Buist has a striped bicycle lane between 70th Street and Island Avenue, and is part of Philadelphia's City Bicycle Network. Traffic is relatively light through this residential area, and the trail route could connect with parkland between 71st and 73rd streets.

A justification for the proposed on road route is the difficulty of getting past the CSX Railroad underpass to the north of Upland Street on Cobbs Creek Parkway. Here, an old stone arch bridge passes over the Parkway and creates a bottleneck with no room for shoulders or a sidewalk. At the present time there is 10" of clearance between the bridge abutment and the road barrier, which is insufficient room for bicyclists to pass safely. Pedestrians can walk under the bridge, although there is not much of a shoulder, or walk along Cobbs Creek Parkway. However, assuming the road width must remain the same, there is room for an additional 15" of clearance by making the verge (between the white line and the barrier) consistent throughout its length; an additional 5" to 10" could be made available by changing the type of barrier (e.g., to Jersey barriers) or simply removing the 5 ½ " spacer bar. Clearance of 30" to 35" would be sufficient for trail purposes, and would prevent the present unsafe need for pedestrians to walk in the street.

The CSX railroad bridge also presents an obstacle for continuing the pedestrian path from Church Lane in Yeadon, Delaware County, into Philadelphia County. Currently, bikers must wait at the red light at 70th Street and Church Lane until all south-bound traffic clears before proceeding south on Cobbs Creek Parkway underneath the bridge. This challenge may be resolved in part by widening the pavement or building footbridges over Cobbs Creek.

Another challenge is access to the Blue Bell Inn, currently bypassed by the design plan for the Cobbs Creek Bikeway. A short-term connection should be made to the Cobbs Creek Bikeway, possibly using Woodland and Island Avenues at 70th Street. Coordination with the Fairmount Park Commission and Philadelphia Streets Department will be necessary to address safety issues as trail development proceeds, as well as access to the historic Blue Bell Tavern.

Land Use and Ownership Patterns:

On road segments of the Cobbs Creek Bikeway would be developed in cooperation with the Philadelphia Department of Streets and Fairmount Park Commission.

- *Cobbs Creek Park at 70th Street to Springfield Avenue*

Option #1:

Once the Cobbs Creek Bikeway rejoins the park at 70th Street, the trail continues north within the park. North of 70th Street the new Cobbs Creek trail would be a side path along Cobbs Creek Parkway all the way to Market Street through Cobbs Creek Park, winding its way through residential neighborhoods. For Tinicum-Fort Mifflin Trail users, Springfield Avenue would be the exit from Cobbs Creek Park. There is no designated on road alternative to this off road portion of the trail.

Several bridge crossings over Cobbs Creek allow Delaware County residents access to the Bikeway, Cobbs Creek Park, and Tinicum-Fort Mifflin Trail. These include the 65th Street crossing into Yeadon, which heads south onto the Cobbs Creek Parkway on the creek's west bank; and two bridge crossings at Mount Moriah Cemetery, which can be accessed via Springfield Avenue or Cobbs Creek Parkway on the Philadelphia side. Exiting Springfield

Avenue, the Tinicum-Fort Mifflin Trail connects to 58th Street. Following 58th Street west to Whitby Avenue would provide another connection between west Philadelphia and Delaware County. Whitby Avenue crosses Cobbs Creek from the Philadelphia side into Fernwood, a neighborhood in Yeadon Borough, Delaware County. Once in Yeadon Borough, Whitby becomes Longacre Boulevard North.

Option #2:

A couple of other alternatives to this route were considered out of safety concerns, including Woodland Avenue from 58th to 70th Street. 58th Street connects back to Springfield Avenue's southern end. This route would bypass Cobbs Creek Park and bridge connections with Delaware County.

Option #3:

Elmwood Avenue from 58th Street to Island Avenue was also considered for safety reasons, and would bypass Cobbs Creek Park and bridge connections with Delaware County as would option #2. 58th Street connects to the southern end of Springfield Avenue.

Existing Conditions:

From 70th Street to Springfield Avenue, the Cobbs Creek Bikeway follows the park along an off road path. Issues in this section of trail relate to redundant and problematic "social trails" that are contributing to the decline of natural areas; poor trail sight lines and lack of perimeter lighting; lack of clear trailheads and access points to adjacent neighborhoods; unauthorized access by ATVs and other motorized vehicles; also safe access to the Cobbs Creek Environmental Education Center at 63rd and Catherine streets. The Whitby Avenue connection to Delaware County is also problematic because of illegal dumping and the necessity of using a separation in the guardrail to cross this street. These issues are to be addressed by the Fairmount Park Commission during the design and construction phases of Cobbs Creek Bikeway's development.

The existing Cobbs Creek Parkway conditions between Whitby and Chester Avenues are good for pedestrians and bicyclists, since a double sidewalk is available along Cobbs Creek Parkway, there are no traffic lights, and the route is scenic. The woods adjacent to the creek are accessible from Whitby Avenue to Pentridge Street; however, the off road path becomes an impenetrable wilderness on the east bank near Florence Avenue. In addition, there are safety concerns because of illegal drug activity and gangs operating in this area. The Delaware County side of Cobbs Creek includes a passable trail from Church Lane to Mount Moriah Cemetery. Building a pedestrian bridge near Florence Avenue in Philadelphia to cross Cobbs Creek into Delaware County would facilitate trail use along this stretch of the bank.

The suggested on road alternatives, options #2 and #3, bypass the off road portion of Cobbs Creek Bikeway and the 70th Street bottleneck. Option #2 would be preferred in terms of pedestrian/cyclist safety, as Woodland Avenue is part of the Philadelphia Bicycle Network and scheduled for the installation of bike lanes. As noted previously, Elmwood Avenue is problematic because of the cars parked in the shoulders and the subway-surface cars traversing the center of the street.

Land Use and Ownership Patterns:

Within Cobbs Creek Park, which is public parkland, trail development would need to be coordinated with the Fairmount Park Commission.

- *Springfield Avenue to Bartram's Garden*

Tinicum-Fort Mifflin Trail users can exit the Cobbs Creek Bikeway at Springfield Avenue just north of Mount Moriah Cemetery to continue on road. From Springfield Avenue, the trail would follow existing streets, taking advantage where possible of bicycle lanes being developed as part of the Philadelphia Bicycle Network through this residential part of West Philadelphia. The trail could potentially head east on 58th Street, north on Elmwood Avenue, and east on 56th Street to Harley Street and Bartram's Garden, thus completing the 20-mile trail loop. Springfield Avenue includes bike lanes as part of the Philadelphia Bicycle Network. Neither Elmwood Avenue nor 58th Street have been evaluated as part of the planning for the Philadelphia Bicycle Network.

Existing Conditions:

Springfield Avenue is a designated part of the Philadelphia Bicycle Network and currently has bike lanes. No connecting east-west cross streets in the area around Bartram's Garden are planned so far to become part of the Bicycle Network; however, 54th Street has been evaluated as a potential link to Bartram's from Springfield Avenue. 58th Street is another potential east-west connection to Bartram's, as it has adequate lane width, and bridges across both the Amtrak and CSX rail lines. 58th Street between Springfield and Elmwood avenues is a shared road facility scheduled to be resurfaced in the near future.

Possible Long-term Alignment:

There are two key distinctions between the short-term and long-term trail alignments envisioned for this segment: the trail connection from John Heinz NWR's northeastern end to the Cobbs Creek Bikeway, Eastwick Station and Bartram Avenue; and the planned long-term route for the Cobbs Creek Bikeway between 86th and 70th streets.

Much of the land along Cobbs Creek between John Heinz NWR and Cobbs Creek Park is owned by the Philadelphia Redevelopment Authority (RDA) and was intended for recreational use. Half the length of this linear strip of parkland remains undeveloped. In the long-term, this RDA property could potentially function as an extension of John Heinz NWR and a trail connection to the Eastwick community, as well as Bartram Avenue and Cobbs Creek Park. This trail connection between John Heinz NWR and Cobbs Creek Park could be an addition to or replacement for the Lindbergh Boulevard connection.

In the short-term, Cobbs Creek Bikeway is to be located on road from 70th Street south to the northwestern entrance to John Heinz NWR; however, in the long-term, the Cobbs Creek Bikeway is planned to follow the riparian border of Cobbs Creek Park south to the Blue Bell Inn, at Woodland and Island avenues. Here, the Fairmount Park Commission managed lands end, and private property begins. The trail is planned to head south along the east bank of Cobbs Creek until it reaches John Heinz NWR.

A portion of the long-term, off road route for the Cobbs Creek Bikeway already exists, as mentioned in the previous section. Beginning at 77th Street and Cibotti Recreation Center / Eastwick Park, it is possible to follow an asphalt path south to 82nd Street and Angelo Place, thus bypassing the temporary on-road route for the Bikeway. However, this path currently dead ends at 82nd Street and does not extend to the John Heinz National Wildlife Refuge at 86th Street. Trail users could be directed on road from 82nd Street to Buist Avenue, then make a left onto 83rd Street and a right onto Chelwynde, which dead ends at 84th Street. A 100-foot trail runs south of Chelwynde and connects with 84th Street and Lindbergh Boulevard.

Existing Conditions:

To the north of John Heinz NWR, there are several industrial properties along Darby Creek; however, much of the land along this stretch is owned by the Philadelphia Redevelopment Authority. Recent concerns about contamination from landfills and industrial activities require careful examination of potential safety risks for trail users. Several sites are designated EPA Superfund sites. In the long term, a riparian trail is possible from Lindbergh Boulevard north to 70th Street, and with remediation and restoration of the creek area, could be an excellent scenic alternative to the on-street section of the Cobbs Creek Bikeway.

The designated Superfund sites are confined mainly to the western Delaware County side of Darby Creek, whereas the trail is intended to follow the Cobbs Creek Parkway primarily on the east side of the creek. All Superfund sites are located south of 78th Street. Currently, the study team is not aware of any hazardous brownfields sites north of 78th Street that would affect trail user safety.

The Clearview Landfill does extend into the east bank of Cobbs Creek between 78th and 84th streets; however, Philadelphia Redevelopment Authority (RDA) lands extend further east of this area, and the trail could be routed through this property so as to avoid the Superfund area, thus providing safe access to John Heinz NWR and adjacent Eastwick community. Currently, much of the area between 86th and 82nd streets is a forested extension from the wildlife refuge whose ownership is unclear. Other areas at and north of 82nd Street consist of open, grassy field in a park setting, with an 8-foot-wide asphalt path between 77th and 82nd streets. This existing off-road section of trail does not appear to be located within contaminated areas and should therefore not present a safety concern for trail users; however, the environmental condition of this potential trail segment needs further consideration. Vegetation would need to be cleared in areas south of the existing asphalt path, and some type of surfacing and grading would be needed to extend the trail through PRA property to connect with the wildlife refuge. This connection would entail using the east or west bank of Darby Creek south of 82nd Street; however, these sections of the bank between 82nd and 86th streets are contaminated by a waste disposal site—the 20-acre Clearview Landfill—that is part of the Superfund area. The woods south of 82nd Street have been used as an illegal building materials dump and are cluttered with discarded tires, piles of broken concrete, PVC pipe and other debris that present a safety hazard for potential trail users.

Because of its proximity to the wildlife refuge, the Darby Creek corridor below 78th Street could become part of the refuge following its rehabilitation as a Superfund site. In the long-term, conceivably 10-15 years, this area could be restored topographically to gently rolling hills and landscaped with native trees, shrubs and wildflowers.

Land Use and Ownership Patterns:

As noted above, much of the land along Cobbs Creek between John Heinz NWR and Cobbs Creek Park is owned by the Philadelphia Redevelopment Authority, including much of the Eastwick Regional Park. Several small “pocket” parks are managed by the Philadelphia Department of Recreation. When Eastwick was redeveloped in the 1960s and new homes were built, many properties were designed to back up to parkland along Cobbs Creek. A section of trail can now be directly accessed by many homeowners, although it is not directly connected to John Heinz National Wildlife Refuge to the south or Cobbs Creek Bikeway to the north.

South of Woodland Avenue, at Main Street, Darby and Island Avenue, is the former Fels-Naptha property, whose historic brick stack can be seen for quite a distance; here a riparian corridor would need to be acquired for trail development. Another option is to continue the trail south on the west bank of Cobbs Creek in Delaware County, utilizing Colwyn Park and Thomas Dougherty Memorial Field. The trail could continue south to the south end of the Colwyn parklands, until about 77th Street. Building a pedestrian/bicycle bridge at Ulena and 77th streets would then re-connect the trail to the Philadelphia County side. The trail could continue on the Philadelphia side of Cobbs Creek, utilizing the pre-existing asphalt trail between 77th and 82nd streets adjacent to the east bank. This trail and parkland, part of Eastwick Regional Park, is located adjacent to the Korman Homes at 78th and Saturn Place.

Further study, planning and implementation of the redevelopment of abandoned industrial properties along Cobbs Creek south of Woodland Avenue would be required in order to incorporate a trail adjacent to the creek. Options for utilizing the west bank of Cobbs Creek in Delaware County should be explored further. Also, since a boardwalk would need to be developed under the Amtrak/SEPTA railroad bridge across Cobbs Creek between 70th Street and Woodland Avenue, coordination would be needed with these organizations, as well as the Pennsylvania Department of Environmental Protection.

B. ISSUES, OPPORTUNITIES AND GOALS

1. Corridorwide Issues and Opportunities

Safety & Security

- Some sections of the current on-road bicycle network are not “family friendly” because there is the potential for bicycle accidents along heavily trafficked streets with narrow shoulders.
- The isolation of some sections of trail, and the presence of vacant buildings and derelict properties, may contribute to a feeling that the trail is unsafe—the potential user may feel alone and vulnerable.
- Organizations/agencies who might develop and manage the trail fear liability for trail use.

Marketing & Outreach

- The trail does not have public visibility, and awareness of Bartram’s, Fort Mifflin and other isolated historic sites in the trail corridor is limited; however, there is a need to increase visitation at these sites, long-term viability, and stronger community support.
- There is increasing recognition of the role of outdoor recreation, including trails and greenways, as a means of exercise that contributes to health and wellness (NPS / CDC initiative).

Management & Maintenance

- Some areas along the trail corridor are perceived to be neglected—keeping these areas clean requires a commitment for management from key stakeholders.

Land Use

- Coordination among stakeholders from two counties, several municipalities and a broad mix of interests is challenging; however, it is necessary to address issues of sometimes incompatible land uses and appropriate future development of areas that would be served by the trail.

Access & Trail Connections

- Greenspace and recreational facilities are fragmented and isolated from one another, thus decreasing their value and utility to the community.
- Safe, easy to access alternative transportation routes between neighborhoods is limited, as is access to valued community resources such as shopping, jobs, parks, community centers, and historic sites. This is particularly the case for isolated, “hidden” cultural attractions such as Bartram’s and Fort Mifflin.
- There is an opportunity and need to enhance multi-modal access to the trail, and take advantage of the ability to transfer from on foot or by bike to SEPTA bus, trolley, and train routes, as well as consider water travel.
- Trail connection with the regional trail system and bicycle routes, such as the existing portions of the Philadelphia Bicycle Network, will require coordination between two counties, several municipalities and diverse stakeholder groups.

Trail Use

- The location and design of the trail must consider a variety of experiences for different trail users and routes that accommodate pedestrians, not just bicyclists—bicyclists and pedestrians are not necessarily compatible.
- Currently there are no guidelines to identify how and when the trail may be used.
- Information may be needed on trail user counts, types of trail users, and impacts of trail users to the local economy, both for the Tinicum-Fort Mifflin Trail and as a comparison to other comparable trails in the United States, in order to justify the expenditures of local communities on trail development.

Facilities Development

- New trail users will require new facilities development—e.g., adequate numbers of restrooms, expansion of Philadelphia Bicycle Network to include on-road trail segments.

2. Issues and Opportunities by Segment

Segment #1: Bartram’s Garden to Fort Mifflin via Lindbergh Boulevard

Economic Redevelopment

- Hotel and convention sites on the north side of Philadelphia International Airport, and PIDC development of large parcels adjacent to Bartram’s Avenue, may spark the interest of area businesses in trail use and create economic demand.
- Southwest Philadelphia underutilized/vacant land and brownfields signify changing land uses and a potential for redevelopment—the trail can be a catalyst in helping to bring about the economic rebirth of the area.

- Opportunities exist to coordinate with development plans along the Passyunk-Penrose Ferry corridor through the WRT airport master plan—possible industrial park for businesses relying on the airport.

Safety & Security

- Current on-road conditions create potential safety hazards for bicyclists (e.g., Island Avenue below Bartram's has 3-foot shoulders, and Essington Avenue shoulders are also obstacles to bicyclists).
- There is the perception that alternative routes between Bartram's and Fort Mifflin may have crime-related safety problems—many potential routes are isolated in remote areas (e.g., Mud Island).
- The long-term vision of the west bank trail along the Schuylkill as an alternative to Lindbergh Boulevard / Elmwood Avenue is hampered by environmental and safety hazards related to heavy industry, and private property issues. Future development trends do not include river-related shipping and new development will be more reliant on highways and railroads; however, most industries on the lower Schuylkill will not locate in the foreseeable future—it is unlikely a trail will ever be routed through the west bank due to the hazardous nature of the industries and need for a large safety zone buffer from the surrounding communities.

Trail Use

- Several potential sections of trail offer the possibility of diverse uses—e.g., part of Fort Mifflin Road that has been relocated under the 8-26 airport tunnel and Old Hog Island Road, near the new airport tunnel.

Facilities Development

- The trail could utilize existing on-road segments of the Philadelphia City Bicycle Network such as Lindbergh Boulevard; however, some additional facilities development (e.g., signage, striping of bike lanes, etc.) may be needed.
- Expanded river related recreational opportunities are needed, such as boating and fishing and the opportunity to develop related facilities at select locations.

Land Use (zoning, acquisition, easements)

- Zoning of the west bank for heavy industry prevents potential trail and riverfront access, and there are conflicts with existing industrial uses such as oil tank farms and river-related uses. Many private lands would require environmental assessment and cleanup, special ownership and use arrangements, and possibly zoning changes.
- The cost of acquiring right-of-way/easements along the west bank of the Schuylkill is very expensive—private property stretches from Bartram's Garden to Penrose Avenue.

Aesthetics / Views

- There are exciting views of the lower Schuylkill and its confluence with the Delaware River, and U.S. Naval Base and ships across the river; however, there is no safe way to access this area, and the river mud has an unpleasant odor.

Interpretation & Education

- Opportunities exist for interpretive and physical linkage of isolated historic sites related to the city's colonial, industrial and maritime history, such as Historic Bartram's Garden, Mud Island, the Navy Yard, and Fort Mifflin; in addition, several sites, including the Southwest Philadelphia Wastewater Treatment Plant, provide educational programs related to the history and ecology of the lower Schuylkill which could be modified or expanded.

Access & Trail Connections

- Currently, the neighborhoods of southwest Philadelphia can not access parkland along the Schuylkill River, except at Bartram's Garden.
- Coordinated multi-modal connections are needed-- SEPTA trolley (No. 36) and bus service, and the dock at Fort Mifflin and proposed dock at Bartram's Garden, can provide good access for bicyclists and pedestrians and the possibility of traveling one way by transit and the other under one's own steam.

Segment #2: Fort Mifflin to Essington via Hog Island Road

- **Route 420 to John Heinz National Wildlife Refuge at Tinicum**
- **Route 291 access to Philadelphia International Airport**

Resource Protection

- There are several natural resources protection issues along this segment of trail, including potential impacts to endangered species and wetlands at the southern end of Hog Island Road.

Economic Redevelopment & Revitalization

- Tinicum Township represents a population of 4,000, with 13,000 workers, and 325 businesses that could take advantage of the trail's economic and recreational potential; the commercial areas of Essington and areas around the airport could be enhanced economically by trail related concessions; and the trail could help enhance the airport as a destination for international / national visitors, with multiple shopping, recreational opportunities and access to historic sites.

Safety & Security

- Currently, lands along the Delaware River section of the trail are isolated, and could represent a potential crime/safety hazard for trail users (e.g., illegal dumping along Hog Island Road).
- Current and future traffic volume and peak hours on Hog Island Road, and vehicles surpassing the speed limit, would affect trail user safety, if the shoulder is considered for trail use. Trail users utilizing the reconstructed Hog Island Road 8-foot shoulder could be in potential conflict with UPS truck traffic.
- Trail users need to respect private property, particularly airport security needs- airport personnel are worried that increased visitation by trail users will result in an increase in vandalism of navigation equipment outside of the airport aviation area.
- Current bike/pedestrian access to Philadelphia International Airport is via the R1 SEPTA train; however, access to the terminals from I-95 and 291 is not suitable for trail use, as the road leading into the terminal is very congested with motorized vehicles, and unsafe for pedestrians and bicyclists. Visitors and airport employees need a safe trail connection to the terminal area, parking, or baggage claim area from Tinicum Island Road or Route 291.
- Bike/ped access to John Heinz NWR and Morton Homestead State Park from Essington, Lester and nearby communities was severed with the opening of I-95 and the widening of Route 420, and the connection between the northern and southern ends of John Heinz was split by Route 420.
- Routing the trail along Route 291 in Tinicum Township would present potential obstacles to trail users, because the township permits parking on the road shoulder.

Access & Trail Connections

- Multi-modal connections with the trail could be strengthened to serve the needs of area residents, visitors, and utilitarian users, including public transit connections with SEPTA trolley (no. 36), bus and train service (Eastwick Station R1 stop), and airport high speed line. These transportation modes provide the possibility of traveling one way by transit and the other under one's own steam.
- Communities of Tinicum Township need opportunities for expanded riverfront access, including access to Little Tinicum Island by boat. Currently residents of nearby Tinicum Township fish and recreate below Hog Island Road, and several informal trails access the riverfront from the rail service road; however, potential public access to the riverfront below Hog Island Road is hampered by security issues related to fuel unloading facilities and rail crossings along an active freight line.
- Enhancement of the 291 corridor should be coordinated with development of the Tinicum-Fort Mifflin Trail as part of the East Coast Greenway—trail connections to 291 corridor and the use of the 291 bridge must be coordinated with Delaware County and USFWS to provide appropriate, safe access to the refuge.

Trail Use

- Employees of the expanding employment center around the airport (Boeing, UPS, hotels, PNC bank), Bartram's Avenue hotels and short-term residences, and Delaware County residents, have commuting and recreation needs that are currently unfulfilled.
- Investigation of off-road and on-road alternatives on Hog Island Road for a variety of users and experiences involves several design issues, including the narrow, four-foot shoulder at the Longwood Creek bridge on Hog Island Road, the need for separation of trail uses, use of the 15-20 foot right-of-way for drainage swales, and potential impacts to wetlands and rare species.
- The temporary berm to be constructed under the southwestern end of Hog Island Road would cause a change in gradient that would present a bicycling challenge to potential trail users.

Facilities Development

- Open space has virtually disappeared in Tinicum Township, and there is a need to create more parkland here.
- Plane watching is a popular activity on the eastern end of the airport; however, there are currently no facilities to formally promote this—the airport has included an observation deck in previous plans for its international terminal.

Land Use (zoning, acquisitions, easements)

- Property ownership and future use of riverfront parcels below and above Hog Island Road are unclear, but necessary to assess the feasibility of an off-road alignment, particularly the use of rail easements that must be coordinated with different rail companies.
- There are potential conflicts between trail use and existing industrial, airport and river-related uses.

Aesthetics / Views

- Numerous exciting views exist across the Delaware River to New Jersey and Little Tinicum Island.

Interpretation & Education

- Historic sites related to the area's colonial, industrial and maritime history, such as Fort Mifflin, the airport, the Lazaretto, Governor Printz Park, Morton Morton House, and Hog Island provide unique views and interpretive opportunities if physical linkages are enhanced. Red Bank in New Jersey (Revolutionary War site with park facilities) also has thematic connections with Fort Mifflin.
- Expanded interpretive opportunities exist for visitors to understand the area's ecology, including the new environmental education center at John Heinz NWR and potentially the PIDC wetland cove and land-based wetland on Delaware riverfront; however, the status of the wetlands is in question.

Management & Maintenance

- An off-road trail facility along Hog Island Road would require a long-term maintenance arrangement (e.g., monitoring illegal dumping, maintaining rail service road).

Segment #3: John Heinz NWR to Bartram's Garden via Cobbs Creek Parkway

Resource Protection

- Negative impacts are documented for hiking and biking on dike trails at John Heinz NWR in terms of wildlife behavior; there may be additional impacts to marshland and wildlife habitat if trail routes were paved.

Economic Redevelopment & Revitalization

- The trail may be a means to generate traffic for the shopping center at Mario Lanza and Lindbergh Boulevards.

Safety & Security

- Portions of Darby Creek within the John Heinz refuge are designated Superfund sites and could potentially affect use of the refuge by trail users and access from 84th and Lindbergh.
- The Mount Moriah, Cobbs Creek Parkway area is perceived to be derelict and unsafe.
- The Eastwick station could be a link to the trail and provide access to John Heinz NWR.

Access & Trail Connections

- John Heinz NWR access issues: identification of how and when John Heinz can be accessed by pedestrians and bicyclists; a direct connection between Center City/University City and the refuge via public transit (Eastwick station) is possible; access to the refuge is currently not available from the west side of Darby and Cobbs creeks.
- The Fairmount Park Commission is developing a TEA-21 funded bicycle route between John Heinz NWR and nearby Cobbs Creek Park, and the Philadelphia Streets Department has already placed bicycle lanes on Bartram Avenue. The two trail systems could be connected to serve regional needs, and allow access to the refuge from the Marriott Hotel and Korman Suites.
- Possible connections exist between Bartram's Garden and Cobbs Creek Parkway—Woodland Ave (58th to 70th Sts.), Elmwood Ave (58th St. to Island Ave.), abandoned trolley corridor parallel to Bartram Ave, and city bicycle network lanes—that could serve the needs of bicyclists and/or pedestrians.

Trail Use

- John Heinz NWR trail use issues include: potential conflict with wildlife management and different types of recreational uses along pre-existing refuge trails; potential overcrowding; inappropriate behavior of biking groups—e.g., high travel speeds, lack of coordination with refuge staff, not travelling on trails designated for bike use; and illegal access by ORVs and dirt bikes.
- A faster paced bicycle commuting corridor is needed for airport area employees, as opposed to a slower paced recreational corridor connecting Bartram's Garden to the refuge.

Land Use (zoning, acquisitions, easements)

- The future disposition of property is in question along some trail segments, including the possible use of abandoned industrial properties along Cobbs Creek south of Woodland Ave, and 84th Street to Woodland Ave.
- The complexity of land ownership at the entrance to the I-95 path from Route 420 needs to be addressed (4 companies with pipeline easements, Tinicum Township, PennDOT).

Aesthetics / Views

- The 1,200 acres of John Heinz National Wildlife Refuge provide vistas of marsh habitat and open water as well as forested areas teeming with wildlife—the trail could take advantage of these views.

Interpretation & Education

- Historic sites related to the region's colonial and industrial history, such as the Morton Homestead in Prospect Park Borough, the Blue Bell Inn, and Fels-Naptha site, and the Cobbs Creek Parkway with its historic bridges, afford unique views and interpretive opportunities within the trail corridor.

3. Corridorwide Goals

Resource Protection

- Promote educational opportunities for historic preservation through focus on area historic sites and their stories, easy access to interpretive signs and exhibits, and interpretive content that explains what individuals can do to protect sensitive cultural sites
- Ensure that trail and related facilities are ecologically sustainable

Economic Redevelopment & Revitalization

- Recognize Philadelphia International Airport as a crucial element of the area's economy and adapt the trail to the airport's need for additional acreage and transportation facilities
- Provide opportunities for the development of new trail related economic activity and businesses, and enhance existing economic activity in communities adjacent to trail

Safety and Security

- Market the trail corridor as safe to reflect reality
- Monitor the trail corridor to ensure safety for trail users
- Provide potential trail users with education on requirements for trail safety and rules of the road

- Ensure community is aware that new trail is in use through visuals such as signage, increased presence of law enforcement, and other means
- Encourage fellowship and group use of trail to decrease sense of isolation along some segments
- Develop safety features along trail to address isolation and seclusion of some segments

Marketing and Outreach

- Coordinate with Schuylkill River Greenway Association in marketing resources of the Schuylkill River Valley National Heritage Area within Tinicum-Fort Mifflin Trail
- Market information on how to access trail, including key access points and trail heads, for both out-of-town visitors and local residents
- Ensure that nomenclature / reference applied to trail is clear and consistent
- Encourage support of trails initiatives in the Philadelphia area
- Develop broad community awareness of the trail's presence

Management and Maintenance

- Plan for long-term operation and maintenance of trail during the design phase, so that trail facilities remain in good condition after trail is developed
- Coordinate with PennDOT, Tinicum Township, and Philadelphia Streets Department to establish highway maintenance requirements that may affect on-road trail facilities

Access and Trail Connections

- Provide trail user with easy access to and simple, safe connections with multiple modes of transportation and area attractions and comfort facilities
- Develop trail alignments that are integrated with existing and planned trail systems in the region
- Provide opportunities for trail users to explore Philadelphia and Tinicum area neighborhoods
- Provide trail users with easy and relatively frequent access to destination points that fulfill basic needs and comforts—e.g., shopping centers, bed-and-breakfasts, ice cream parlors in summer, refreshment stands, rest areas

Aesthetics / Views

- Develop partnerships with and create incentives for non-profits, businesses, and industries to improve vistas within the trail corridor, as a marketing tool to enhance visibility of businesses and create positive presence in the community
- In recognition that aesthetics are of prime importance in attracting trail users, develop landscape plan for streets that are incorporated into trail route, to “soften” the urban environment and create a more pleasant trail experience.

Interpretation and Education

- Through partnerships among the Schuylkill River Greenway Association, school districts, colleges and universities, and non-profits, enhance or create an exchange and sharing of resources for interpretation and education at sites within the trail corridor.

Land Use

- Integrate trail planning with overall plans for redevelopment in trail corridor
- Develop review process for planning projects that evaluate compatibility with bicycle mobility plans [Note: City of Philadelphia to review federally funded highway projects for compatibility with bicycle mobility plans as part of planning process? PennDOT issue—review of these projects is triggered by municipality; more of an issue in suburban areas, where highways create intrusions and conflicting land uses.]

Trail Use

- Encourage trail's use as commuting alternative to motorized vehicles

Facilities Development

- Design trail for safe recreational use and to be accessible to users of varying ages and physical abilities
- Make trail connections between Center City and Philadelphia International Airport obvious through simplicity of trail route, continuity of bike lanes, and clear signage and other marking (example: Boston's red line for Patriot's Trail)
- Maximize enjoyment of trail experience by developing adequate numbers and types of comfort facilities
- Design trail facilities to include useful information that enables trail users to find their way to destination points
- Partner with SEPTA to construct trail facilities at train, trolley and bus stations to facilitate intermodal travel

4. Goals by Segment

Segment #1: Bartram's Garden to Fort Mifflin via Lindbergh Boulevard

Economic Redevelopment & Revitalization

- Balance costs of trail development with potential returns by promoting the trail as a redevelopment catalyst for southwest Philadelphia

Land Use

- Address conflicting land uses that do not support bicycle/pedestrian friendly routes
- Ensure trail does not access industrial areas that could compromise user safety or city / industry liability
- Encourage mixed use, transit-oriented development (Eastwick is a good example of mixed use development) that promotes bicycling and walking

Access and Trail Connections

- Establish direct connection between Bartram's Garden to Fort Mifflin trail segment and Schuylkill River Trail on east bank so that broader community of trail users can access

Fairmount Park, as well as historic gems such as Fairmount Water Works and the Philadelphia Art Museum

- Establish short-term connection between Bartram's Garden and Fort Mifflin using Lindbergh Boulevard
- Look for opportunities to work with City of Philadelphia on developing a west bank trail/greenway in the long-term that will complete the vision of the Schuylkill Heritage Corridor while recognizing the importance of the city's industrial base
- Look for opportunities to use trail alignments with distinctive features that create an interesting landscape and orient trail users to their surroundings

Aesthetics

- Provide scenic views at select sites along the Delaware and Schuylkill rivers of river related industries such as shipping

Facilities Development

- Design trail facilities to serve commuters to airport and surrounding businesses and industries

Segment #2: Fort Mifflin to Essington via Hog Island Road

- *Route 420 to John Heinz National Wildlife Refuge at Tinicum*
- *Route 291 access to Philadelphia International Airport*

Resource Protection

- Ensure that development of trail and trail use minimize or avoid impacts to sensitive resources such as wetlands and rare species

Economic Redevelopment & Revitalization

- Encourage partnerships among industries and businesses in Lester and Essington, and surrounding the airport, that jointly promote trail related economic development activity
- Facilitate trail access to existing restaurants, hotels and other businesses in Tinicum to enhance visitation and consequently business
- Encourage businesses that serve trail users, including visitors on layover, to locate in the airport (e.g., bike rentals)

Safety and Security

- Recognize and minimize potential conflicts among trail user groups
- Recognize and avoid potential conflicts between trail user groups and motorized vehicles
- Develop safe pedestrian/bike access from trail segment along Route 291 into Philadelphia International Airport
- Assess feasibility of safely utilizing Route 291 corridor as part of trail

Marketing and Outreach

- Market historic sites in Delaware County, located within trail corridor, as a group to both commuters and recreationists, in order to strengthen their visibility and increase visitation on a par with Philadelphia historic attractions
- Encourage airport to market local scenic, historic and natural attractions to airport visitors and employees

Management and Maintenance

- Engage Philadelphia International Airport, airport businesses and corporations in maintaining trail segments around and in airport

Access and Trail Connections

- Facilitate visitor and employee access to Philadelphia International Airport from the trail, for commuting purposes
- Develop trail access from Tinicum Island Road, and incorporate the road into the trail system, to allow recreation and commuting use by US Post Office, US Air, and other area employees
- Develop a connection to John Heinz NWR from Philadelphia International Airport
- Expand riverfront access for recreational activities along Delaware riverfront
- Enhance bike/ped access to John Heinz NWR from surrounding communities
- Integrate airport facilities with Tinicum thru connections that recognize the integral relationship between Tinicum Township and Philadelphia International Airport, since airport is major area employer
- Facilitate intermodal travel at airport terminals and SEPTA stations by developing bike, pedestrian, and train connections to Philadelphia International Airport and nearby hotels, Eastwick station, and Cusano Environmental Education Center, in partnership with SEPTA, airport, PennDOT, and area hotels

Aesthetics / Views

- Recognize importance of natural vistas and scenery as well as interesting urban features and seek to maintain and enhance them
- Develop observation areas and scenic views for trail users that highlight urban riverfront activities

Interpretation and Education

- Consider interpretive connections through Revolutionary War theme between Fort Mifflin and Red Bank, New Jersey, across the Delaware River, and possible development of water access between the two sites.
- Develop interpretive signage at select locations along the trail and educational exhibits at historic, cultural, scenic, and industrial sites accessed by the trail

Facilities Development

- Develop facilities at Philadelphia International Airport that encourage use of and return visits to the trail and take advantage of pre-existing recreational demands and activities
- Develop facilities at airport for employees that encourage alternatives to car commuting as well as promote recreation and fitness during breaks
- Provide comfortable means for trail users to observe airplanes taking off at Philadelphia International Airport

Segment #3: John Heinz NWR to Bartram's Garden via Cobbs Creek Parkway

Resource Protection

- Provide educational and interpretive opportunities that promote appreciation of and understanding of nature and the natural world
- Eliminate trail user conflicts with nature at John Heinz National Wildlife Refuge

Safety and Security

- Minimize potential conflicts between bikers and other trail users at John Heinz NWR
- Encourage use of current Cobbs Creek Bikeway route from northern terminus until 70th Street railroad trestle, and work with trail design team to develop safe alternate on-road route south of 70th Street

Marketing and Outreach

- Emphasize new Eastwick transportation center as multi-modal connection to trail, present economic benefits for commuters, and provide trail facilities information to commuters and recreational users at both airport and Eastwick station

Land Use

- Examine potential land acquisitions and land use changes for greenway connections to John Heinz National Wildlife Refuge that do not sacrifice refuge security and integrity
- Recognize that much of trail segment lies within river corridor or wetland flood zone, with potential impacts to trail design and development

Access and Trail Connections

- Coordinate with SEPTA in creating intermodal design for Eastwick station as major transportation hub, connecting trail with train, bus and trolley transit
- Develop safe alternate route from 70th Street to Blue Bell Inn (Elmwood and Island avenues), which is currently bypassed by Cobbs Creek Bikeway design
- Connect trail with historic Mount Moriah Cemetery

Aesthetics / Views

- Promote increased use of Cobbs Creek bike trail to discourage illegal dumping and vandalism and maintain cleaner creek

Interpretation & Education

- Develop Blue Bell Inn as interpretive center marketing trail and its resources (auxiliary buildings may need to be acquired)
- Interpret history utilizing historic sites in the trail corridor and their resources in a variety of interesting ways, including historic re-enactments with Revolutionary War uniforms at Blue Bell Inn, emphasis on Swedish connection at Cobbs Creek dam, and interpretive markers at Mount Moriah Cemetery (Betsy Ross grave)

Trail Use

- Maintain current types and levels of trail use within the John Heinz National Wildlife Refuge, with the option of re-examining trail uses in the future during master plan process

Facilities Development

- Emphasize trail connection with Eastwick station as major transportation hub through coordination of bike/ped facilities planning and development with SEPTA, and develop clear and obvious physical connection between station and trail

C. Populations Served by the Trail

Demographics and Commuting Patterns

The following information provides a cross-section of Delaware and Philadelphia counties' residents, as well as major area employers such as Philadelphia International Airport employees and its visitors. They would be the primary trail users.

Philadelphia County

Philadelphia County covers approximately 130 square miles of land, including about 16 miles of the Schuylkill River (some 28 miles of shoreline on the west and east banks) and about 20 miles of shoreline on the west bank of the Delaware. Philadelphia is the fifth largest city in the United States. The total population as of 2000 was 1,517,550, as compared to 1,585,577 in 1990, a 4.3% decrease over ten years. Philadelphia has an average of about 11,736.3 persons per square mile, exhibiting relatively high density despite the steady decrease in population in recent decades. 100% of the population is urban, and is very diverse. As of the 2000 census, approximately 45% of the population was considered white, 43.2% African American, 4.5% Asian, 0.3% American Indian and Alaska Native, and 7.0% are other or of two or more races. Population by age categories indicates that the largest age group in Philadelphia is 25-54, containing 41.3% of the population. 14.1% of the population is 65 or older, 29.8% 5-24 years of age, 3.8% 60-64, and 6.5% 0-4 years of age. The median household income in 1999 was

\$30,746, significantly lower than the statewide median household income (\$40,106) and the national median household income (\$41,994).

Although the majority of Philadelphians own a home, the number of rentals is relatively high. Of non-vacant residences, 62.0% were owner occupied and 38.0% rented, according to the 1990 US Census. The 2000 US Census indicates a sharp decrease in the number of owner occupied residences to 53.5% and corresponding increase in rentals to 46.5%. A relatively modest portion of homes in the county is vacant overall (10.9%); however, certain sections of the city have very high vacancy rates, which include not only residences but also abandoned factories and other commercial structures.

Philadelphia is the primary employment center for a 9-county region, and in 1995 boasted 676,000 jobs, including many in the 2,100 retail stores in the Center City district, the greatest concentration of stores in the region. Although employment in the retail sector declined from 1990 to 2000, this sector is still strongly represented. According to 2000 US Census data, fully 10.4% of all city residents 16 years and older worked in retail. In general, 41.7% of county residents worked in technical, sales and administrative support. 31.5% performed management and professional specialty services and 19.7% worked in various service occupations. In spite of the decline of industry in Philadelphia, 8.8% of Philadelphians work in manufacturing, a significant decrease from 1990, when 13.6% of Philadelphians were so employed. An amazing 16.5% are government employees, the majority of those working for the municipality, as opposed to Delaware County's 9.8%, including state, federal, and local government employees. 7.7% of Philadelphians work in finance, real estate and insurance. Other occupations that were respectably represented include construction, transportation, and business and repair services. A negligible number of county residents, 0.1%, were involved with agriculture, forestry or fishing.

A number of the top 50 employers in the Philadelphia area are located in southwest Philadelphia, in the trail project area, including U.S. Air, Inc.; PNC Bank; Sun Refining and Marketing Company; United Parcel Service; Mellon PSFS—with branches at Penrose Plaza, Island Avenue and Lindbergh Boulevard; Marriott Hotels; Hertz and Enterprise auto rentals. This is borne out by the 1994 figures for numbers of Philadelphia employees in the petroleum refining industry--1,000 to 2,499 in 1994; number of employees in the airport and flying fields—410 in 1994; 2,490 employees in transportation-related services; 1,313 employees in water transportation; and 17,178 employees at commercial banks. These employees represent a large potential pool of trail users.

How do these workers travel to their jobs? In 2000, 1.9% did not commute at all because they worked at home. The majority (62.0%) of commuters drove alone or carpooled, representing a significant increase from 57.3% in 1980. 25.4% commuted via mass transit, a significant decrease from 30.0% in 1980. 10.7% of commuters walked or biked to work, essentially the same as in 1980. Traditionally, bicycle commuters have tended to be lower income: in 1990, 50% of bicycle commuters reported incomes of \$5,000 or less. Bicycle commuters also tend to be under 30 years of age. Bicycle commuting tends to decrease as income increases. However, these trends are changing in favor of increasing public transit and bicycle use due to the rising energy costs of the last several years, which is making long car commutes less desirable.

Another interesting population statistic has to do with recreation. Apparently, a greater number of Philadelphia residents—almost 2.0% of the population—have fishing licenses than one would imagine, in spite of the very few numbers of designated fishing areas in the city. Slightly fewer Delaware County residents have fishing licenses. It is likely that many of these residents from

both counties fish primarily in other areas of the state or region; however, the popularity of fishing among some Philadelphia and Delaware county residents indicates an opportunity for providing more close-to-home recreation. The trail could be a means to develop access to potential fishing areas along the Schuylkill and Delaware rivers in an area with very limited open space.

Delaware County

Delaware County is composed of 184.43 square miles of land, with 8 miles of shoreline along the Delaware River. The total population as of 2000 was 550,864, equating to an average of 2,986.9 persons per square mile, exhibiting moderate density; however, Tinicum Township only contained 4,354 residents, a density of about 777 per sq. mi. and one of the lowest in the county. In contrast, Tinicum Township is surrounded by some of the most densely populated municipalities in the county, including Darby Borough, with 10,299 residents in 2000 (about 7,700 persons per square mile); and Ridley Township, with 30,791 residents (about 6,100 persons per square mile). Generally, townships and boroughs with the greatest densities (greater than 7,500 persons per square mile) border Cobbs Creek and Darby Creek and the Delaware River area.

Delaware County has experienced a net gain in population of only 0.6% since 1990; however, there was a slight decrease in population from 1990 to 1994 in Tinicum Township and nearby Eddystone Borough, Norwood Borough, Folcroft Borough, Ridley Township and Ridley Park Borough. Darby Borough and Township both saw significant decreases in population from 1990 to 2000 (-7.5% and -12.2% respectively). Nearby Glenolden saw a significant 3.0% increase in population from 1990 to 2000.

An overwhelming 98.1% of the Delaware County population is urban. As of the 2000 census, a majority (79.5%) of the population was considered white, 14.4% African American, 3.3% Asian, 1.5% Hispanic or Latino, and 1.1% two or more races. The largest age group in Delaware County is 25-54, containing 42.1% of the population. The majority (16.2%) of this age category is represented by 35-44 year olds. 27.5% is 5-24 years of age, 15.5% of the population is 65 or older, 6.2% is less than 5 years of age, and 3.7% is 60-64 years of age. Generally, townships in the project area reflect these age breakdowns. Tinicum Township has slightly more residents in the 25-54 age range and slightly fewer in the 5-24 age category. Ridley Township has slightly higher numbers of residents in the over 65 age category.

The median household income, \$37,337 in 1989, rose to \$50,092 in 1999, significantly higher than Philadelphia (\$30,746) and the statewide median household income (\$40,106), and also higher than the national median household income (\$41,994). The vast majority of Delaware County residents own a home, and the number of rentals is relatively small as compared to Philadelphia. A small portion (4.9%) of homes in the county is vacant, relatively low as compared to Philadelphia's 10.9%. Of the 95.1% residences that are occupied, 66.9% are owned and 33.1% are rented. Number of rentals as compared to owner occupied units has increased significantly since 1990, when 72.7% of occupied units were owned and 27.3% rented.

Employment of Delaware County residents is very diverse, with the highest percentage (25.5%) working in health care, social services and education, 11.2% working in retail, 9.9% in manufacturing, and 8.9% in finance, insurance, and real estate. The least number of county residents, less than 0.2%, work as miners, or in agriculture, forestry or fishing.

Information from the US Census is not yet available on employment in-migration and out-migration among counties. The total number of resident workers countywide as of 1990 was 261,607, an 8% increase from 241,314 since 1980. In Pennsylvania suburbs in general, the increase has been 20% (Bucks, Delaware, Philadelphia, Montgomery, Chester). The increase in Delaware County employment reflects the explosion of business and industries in eastern Delaware and southwestern Philadelphia counties, especially the expansion of Philadelphia International Airport and surrounding industries.

Several of the top 50 employers (ranked by numbers of employees) in Delaware County are located at and around the Philadelphia International Airport. Philadelphia International Airport, which actually straddles two counties, has nearly 20,000 employees. Out of an additional 130 employers at the airport, 26 employ 14,000 workers (10.0% of whom take public transit). Other major area employers include The Boeing Company (approximately 5,200 full time employees), United Parcel Service (approximately 350 full time and 2,600 part time employees), and Sun Refining and Marketing Company (about 700 full time employees). Other employers with more than 100 employees include the Upper Darby and Ridley school districts, PNC Bank, AIG Claim Service (one of the nation's largest insurers), and Franklin Acceptance Corporation. The combined pool of workers in the Delaware County portion of the project area represents over 30,000 potential trail users.

These employment patterns are supported by the numbers of Delaware County employees in the following industries (as of 1994): approximately 1,000 to 2,500 in the petroleum refining industry, 5,000 to 10,000 employees in aircraft and parts manufacturing, 548 employees in air transportation, 648 employees in water transportation, 2,062 employees at commercial banks, and 2,008 employees at elementary and secondary schools.

Many of these employers participated in the development of a reverse commute plan in 1991 to enhance transit service between waterfront businesses and central and western Delaware County communities. These companies identified public transit commuting deficiencies that prevented potential and actual employees from getting to work in this area. Some steps have been taken to address these deficiencies, including the expansion of the public transit system in the airport area, including Hog Island Road bus service.

Traditionally, Delaware County commuters have been less likely than those in Philadelphia to employ public transit or alternative travel modes such as bicycling. In 2000, 85.1% of Delaware County commuters drove alone or carpooled, as opposed to 79.3% in 1980. 7.5% commuted via mass transit, as opposed to 12.9% in 1980. 4.4% walked or biked in 2000, as compared to 5.7% in 1980. 2.7% worked at home, a slight increase from 1990. These trends seem to indicate that increasing public transit and bicycle use will be difficult due to the increasing distance of commutes and/or increases in work-at-home arrangements; however, rising energy costs of the last several years and increasing traffic congestion in the Philadelphia area may eventually support shorter bicycle commutes.

Higher numbers (91.9%) of Tinicum Township commuters drove alone or carpooled in 2000, as compared to Delaware County commuters in general, and only 2.5% commuted by mass transit. A significant percentage (6.0%) of workers walked or biked, although this represents a significant decrease from 1990, when 11.3% of commuters chose these modes of travel. This percentage is significantly lower than the City of Philadelphia but significantly higher than adjacent townships. Only 0.4% worked at home.

In Ridley Township, fewer numbers (88.8%) of workers drove alone or carpooled than in Tinicum Township; however, a significantly higher number (6.7%) of workers commuted via mass transit as compared to Tinicum Township. Only 3.2% walked or biked to work, and 1.3% worked at home. Work-at-home arrangements seem to have increased significantly from 0.8% in 1990.

86.7% of Darby Township workers drove alone or carpooled in 2000; however, a significantly higher percentage (8.8%) commuted via mass transit as compared to surrounding boroughs and townships. This percentage nonetheless represents a significant decrease from 12.2% in 1990. 4.0% walked or biked to work, as compared to 6.2% in 1990, and 0.5% worked at home.

Philadelphia International Airport

The Philadelphia International Airport is one of the largest economic engines in Pennsylvania, generating an estimated \$6 billion in revenue for the regional economy, and employing a workforce of nearly 20,000. In addition to the employees at Philadelphia International Airport, the airport's visitors represent a significant pool of potential trail users. With 484,308 aircraft takeoffs and landings in 2000, the airport processed more than 24,918,276 passengers. Some of these visitors stay overnight around the airport or in Center City, and are looking for tourism activities and recreation during their stay. It remains to be seen whether the effects of recent major layoffs at the airlines in the wake of the terrorist attacks and downturn in the economy will be temporary or permanent, and whether or not there are additional ripple effects to airport area businesses. These effects may be countered by public monies supporting the airline industry, the hiring of additional security personnel, and re-established confidence with the flying public over time.

The airport area has much of the infrastructure to accommodate tourism, with considerable transportation infrastructure, 15 hotels adjacent to the airport alone, retail venues, and cultural amenities in place. In addition, the airport area can tap into the growing tourism market of Center City Philadelphia, estimated at over 5 million tourists in 2000. Non-local travelers to Philadelphia spent about \$2.1 billion for lodging, food, entertainment, and retail purchases in 1993, representing 4.5% of the city's economy. Visitors to Philadelphia account for almost 25% of all tourist dollars generated statewide. The airport already channels many non-regional and foreign visitors through Philadelphia. Hotel occupancy rates have increased dramatically in the past few years to serve these visitors, and new hotels have gone on-line, not only in Center City but also around the airport. Current economic uncertainty is likely to cause some decrease in the numbers of visitors to Philadelphia, at least in the short-term; however, the significant tourist attractions of Philadelphia and convention related events will continue to attract visitors each year in the millions. It is noteworthy that after 9/11, Philadelphia showed the quickest recovery of the top 25 destination cities in the United States.

There are many historic sites within walking and biking distance that could be marketed to these visitors. These sites span the 17th through the 19th centuries, reflecting the entire spectrum of Pennsylvania history, from the first Swedish settlements at Tinicum to the botanic explorations of the early 18th century to the American Revolution and Civil War. In addition, boat tours are already under way or planned for historic sites on the lower Schuylkill such as Fort Mifflin, Bartram's Garden, and the Fairmount Water Works.

In addition, many travelers are exercising more while on the road than at home, and consequently airport hotels are strengthening their fitness offerings. For instance, the New

Orleans Airport Hilton built a screened-in walking track because people were going outside and walking in the parking lot. The Miami Airport Hilton and Towers, located on a strip of land in the middle of a 100-acre man-made lake, has an oversize pool with a jacuzzi and a half-mile jogging trail with 11 exercise stations.

Bicycle Travel Patterns

Philadelphia has the largest number of commuter bicyclists in southeastern Pennsylvania, with Chester, Bucks, Montgomery and Delaware counties relatively far behind in this regard. The 2000 US Census data reported that less than 2.5% of commuter trips within the region were made by bicycle; however, this is still a significant increase from 1990, when less than 1.0% of commuter trips within the region were made by bicycle.

Large employers are in a better position to provide amenities that encourage people to bicycle to work, such as showers, dressing areas, and bike parking, and thus more bicycle commutes occur in municipalities that host large employers (+500 employees). Also the presence of a bikeway attracts a critical mass of people who commute by bike. Communities that construct bikeways are more likely to report bike commuters.

Trips made by bikes in the region tend to be under 17 minutes, with Philadelphians and Delaware County residents making the longest trips—18 and 17 minutes, respectively--and Chester, Montgomery and Bucks residents making the shortest trips, between 14 and 16 minutes.

Recommended bicycle commute trips are two miles or less, given the terrain, climate and limited facilities of southeastern Pennsylvania. Given that less than one percent of commuter trips of less than two miles are by bike, there is a strong possibility to increase this potential ridership through trail development. Even a one percent increase would eliminate over 1,000 autos from the roadways and reduce emissions by some 20 tons annually.

Existing bicycle facilities in southeastern Pennsylvania are extensive, but fragmented. There are isolated facilities at various parks and natural areas such as John Heinz NWR, and a linear trail along the Schuylkill River from the Philadelphia Art Museum to Valley Forge Park, using city streets, Fairmount Park trails, and off-road bikeways. The Philadelphia Streets Department has identified and begun implementation of on-road connections as part of the City Bicycle Network (the only roads excluded entirely from consideration are the interstates and limited access highways). Delaware Valley Regional Planning Commission has identified potential off-road routes, including the west bank of the Schuylkill River from Bartram's Garden to Fort Mifflin, Schuylkill River Park at 26th and Pine in Center City to Bartram's Garden on the left bank, and Cobbs Creek Park to 70th Street. Various surface treatments, "Share the Road" signs, and bicycle lanes are being installed where conditions permit.

A 1992 doctoral candidate at the University of Pennsylvania collected information about bicycle usage in southeastern Pennsylvania (Bucks, Chester, Montgomery, Delaware and Philadelphia) and found that bicycle use had steadily increased over the past decade. 745 people responded to a question on current bicycle use, with 87% of respondents indicating bicycle use for recreation, 79% for exercise, 51% for touring, 27% for training, 26% for visiting, 25% for commuting, 20% for shopping and only 5% for commuting to school. 763 respondents gave reasons for not commuting by bike. The top ten reasons were:

75% - inclement weather
62% - arrive sweaty
60% - too much traffic
53% - too dangerous
51% - takes too long
49% - need to carry things
41% - no night biking
36% - too cold
20% - no bike parking
19% - too tired

These statistics indicate that area residents would potentially use the trail for commuting as well as recreation, particularly if employers provided support facilities such as showers and bike parking. Safe bicycle access separated from motorized vehicle routes would also encourage more bicycle commuting. Transportation infrastructure that already supports bicycle use for commuting includes SEPTA's bike-on-rail program, begun in 1991, which permits area cyclists to board regional rail line trains with their bikes, and Philadelphia's Bicycle Network.

D. Precedents for Trails in Industrial Areas

The idea of establishing a trail in an industrial corridor is not new. There are trail precedents in other areas of the nation that have been planned, designed and constructed to safely take advantage of the interpretive and educational opportunities that an industrial landscape can provide, while addressing the liability and safety concerns of industrial landowners. Trail users are often fascinated by remnants of historic industries as well as the operations of existing industries, and want to know how and why such a landscape developed. Industries are often eager to be good neighbors and supporters of projects that help them create a positive presence in the community, with consequent economic benefits for the company and its employees.

Two projects where greenways and bikeways have been established in or adjacent to industrial settings are of particular relevance to this study. The Baltimore – Washington International Airport loop trail, ostensibly the first trail in the nation to circumnavigate an airport and access its terminals, is one such project. Like the Baltimore – Washington loop trail, the Tinicum-Fort Mifflin Trail is planned to circle and provide trail access to an airport. The Ohio & Erie Canal National Heritage Corridor included the Barberton Canal Corridor Master Plan, The Ohio & Erie Canal Reservation and the Ohio & Erie Canal Corridor Study in its planning for trails in active industrial areas, many sections of which have been built. The Ohio & Erie Canal NHC relates to the challenges of creating recreational greenways that enhance a river corridor within a matrix of heavy industry and commercial areas, agriculture, downtowns and suburban areas. The Ohio & Erie, similar to the Tinicum-Fort Mifflin Trail, features a trail as the main spine of a National Heritage Area.

Ohio & Erie Canal National Heritage Corridor

Background / Regional Context



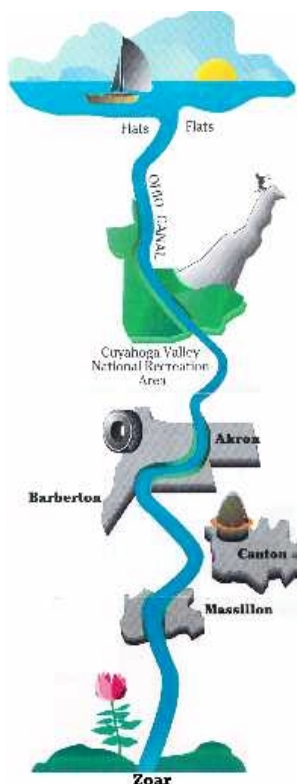
The Canal Visitor Center at Cuyahoga Valley NRA—re-enactment of lock operation on canal

The Ohio & Erie Canal National Heritage Corridor stretches 87 miles along the Cuyahoga River in northeast Ohio. Starting at the historic northern terminus of the canal at Lake Erie and the City of Cleveland, the corridor stretches south to the Cuyahoga Valley National Recreation Area (CVNRA); through the towns of Massillon, Canton, Barberton, and Akron; and ends at the historic village of Zoar in Tuscarawas County.

The Ohio & Erie Canal NHC includes 4 counties—Cuyahoga, Summit, Stark, and Tuscarawas—and 38

municipalities. The Management Plan for the heritage corridor recommended extending the canal trail south to New Philadelphia, making the total length 110 miles.

The Ohio & Erie Canal was designated a National Heritage Corridor in 1996. The Ohio and Erie Canal's national significance is stated in PL 104-333, Title VIII, Sec. 802:



"This area of northeast Ohio celebrates the canal that enabled shipping between Lake Erie and the Ohio River and vaulted Ohio into commercial prominence in the early 1830s. The canal and towpath trail pass through agricultural lands and rural village into industrial communities such as Akron, Canton, and Cleveland that trace their prosperity to the coming of the canal."

Similar to the Schuylkill River Valley National Heritage Area, the organizing unit for the Ohio & Erie NHC is the canal corridor and related historic resources. The Towpath Trail, the spine of the NHC, parallels the canal built in the early 1800s to connect Lake Erie to the Ohio River. The canal runs along Cuyahoga River and Tuscarawas River (south of Akron).

The idea for a National Heritage Corridor grew out of various initiatives and resource studies during the 1970s and 1980s, as well as grassroots efforts. During the mid-1980s the private non-profit Ohio Canal Corridor (originally North Cuyahoga Valley Corridor, Inc.) formed to develop a trail concept for the northern canal area as a hiking trail and educational resource. Various preservation groups throughout the corridor were working to preserve canal locks and other historic features. The National Park Service began building a 20-mile towpath trail in CVNRA during the late 1980s, hoping that a trail connection would be developed to downtown Cleveland. The Cuyahoga County

Planning Commission sponsored a feasibility study in the early 1990s to restore and develop the canal. This study outlined ways to link existing parks and exploit economic development opportunities along the canal.

Finally, in 1991 Congress appropriated \$175,000 for the National Park Service (NPS) to study the Ohio & Erie Canal Corridor for its national significance, and suitability and feasibility for inclusion as a potential NHC unit or NPS affiliated area. This special resource study, The Ohio and Erie Canal Corridor Study: A Route to Prosperity, led to the passage of legislation authorizing the Ohio & Erie Canal as a National Heritage Corridor. Within the next few years, two additional studies—Barberton Canal Corridor Master Plan and Ohio & Erie Canal Reservation—specifically addressed management and interpretation of trail corridor resources within industrial lands.

Connecting urban areas to the rural countryside, the Ohio & Erie Canal Heritage Corridor seeks to preserve the natural, historical and recreational assets of the corridor to stimulate economic development and improve the quality of life for the region. One of the primary objectives of NHC implementation includes retention of existing industries as well as developing heritage tourism. The goals of the Management Plan include:

- Encouraging new museums, housing and commercial developments that are sensitive to corridor values and significant resources
- Solidifying the physical connections of the corridor via train, trail, scenic byways
- Developing a regional identity
- Utilizing appropriate signage to direct visitors and residents to corridor resources
- Developing an interpretive program to increase both residents and visitor knowledge of the resource values



Cuyahoga Valley Scenic Railroad at Peninsula

Although the draft Management Plan was only completed in the spring of 2000, various implementation projects that form the nucleus of the NHC have been under way since the 1970s. The Towpath Trail, the spine of the Heritage Corridor, is halfway to completion—40 of the 87 miles of proposed canal trail are developed, including 22 miles of trail through Cuyahoga Valley NRA. Only two to three miles of trail right-of-way remain to be acquired from a number of small private property owners.

Much of the focus of implementation is planning for transportation corridors, including the state scenic byway “Canalway Ohio,” using existing

roadways that parallel the canal from Cleveland to Dover, Ohio; the Cuyahoga Valley Scenic Railroad, envisioned as a multi-modal regional link among CVNRA, Tower City, Cleveland metro system trolley and train service, Akron Regional Transit System, and other transportation hubs; and individual bike commuting routes from major cities with links to the Towpath Trail. One of the key features is the Ohio and Erie Canal Reservation, just south of Cleveland, including 5.5 miles of paved trail, and gritty industrial landmarks as well as scenic natural areas.

Partnerships with Industry

The management entity for the NHC, authorized by the legislation, is the non-profit Ohio & Erie Canal Association (OECA), a hybrid of the two non-profits Ohio and Erie Canal Corridor Coalition (OECCC) and Ohio Canal Corridor (OCC). The latter two groups assist in implementation of the Management Plan and their responsibilities are generally divided by region.



Historic Village of Zoar

Although the Ohio-Erie Canal Corridor Coalition (OECCC)—based in Akron—is the overarching non-profit organization that coordinates activities in the National Heritage Corridor, the OCC generally manages the northern part of the NHC around Cleveland, while the OECCC manages the southern portion of the NHC. These two entities share functions and membership. Representatives include industries, commercial interests, community organizations, bicycle and birdwatching groups, among other organizations.

Partnership building has continued throughout the eight years since the corridor achieved NHC status, and industries are an important part of the picture since they own quite a bit of land along the canal. Businesses and industries have been able to work with the non-profit heritage corridor managing entities to lead implementation efforts because of the non-profits' relative neutrality. The OECCC has been the most active of the two managing entities in working with industrial landowners, and expects to have 90 miles of trail developed south of Cleveland within the next five years.

One example of the partnership between industries and the heritage corridor is the remediation of canal lands in the City of Barberton, an offshoot of the Barberton Canal Corridor Master Plan process. Barberton's Master Plan specifically noted that the multi-purpose recreational trail would offer access to points of interest that include B&W's power generation equipment research and manufacturing facilities as well as other adjacent industries. Wayside exhibits and special programs would communicate the area's industrial history to trail users, as well as the operations of existing recycling and industrial waste handling industries such as auto recycling facilities. Industrial landowners are expected to clean up their facilities and help develop interpretive programs; however, development and management of the trail is to be shared with other private and public entities. The trail is designed to prevent physical access to most active industrial operations, while allowing views and interpretation of the facilities.

Pittsburgh Plate Glass (PPG) owns some 5 or 6 miles of canal lands in Barberton and has been a strong supporter of the coalition's heritage efforts. They are remediating their canal lands with the help of the Ohio and U.S. EPAs. A series of residue ponds hold hazardous chemicals sent to the ponds as byproducts from glass manufacturing. PPG has spent \$15 to \$20 million for the remediation of some 2,000 acres of spoil lands and plans to turn them over to the county to manage as parkland for passive recreation. PPG will continue to own the canal lands for liability reasons. This management arrangement is typical for corporate lands within the canal corridor, in which the county park systems manages leases on private lands and private groups develop the trail. The process of restoring the canal segment for trail use and formalizing management arrangements is a long-term process with perhaps a 50-year horizon, but all parties working together on this project agree that it is well worth the effort economically and socially. The OECCC acted as a broker between PPG and county's metro park agency, using industry reps

to speak to them in their own language. PPG considers the project an excellent public relations campaign and a means to do something positive for the community.

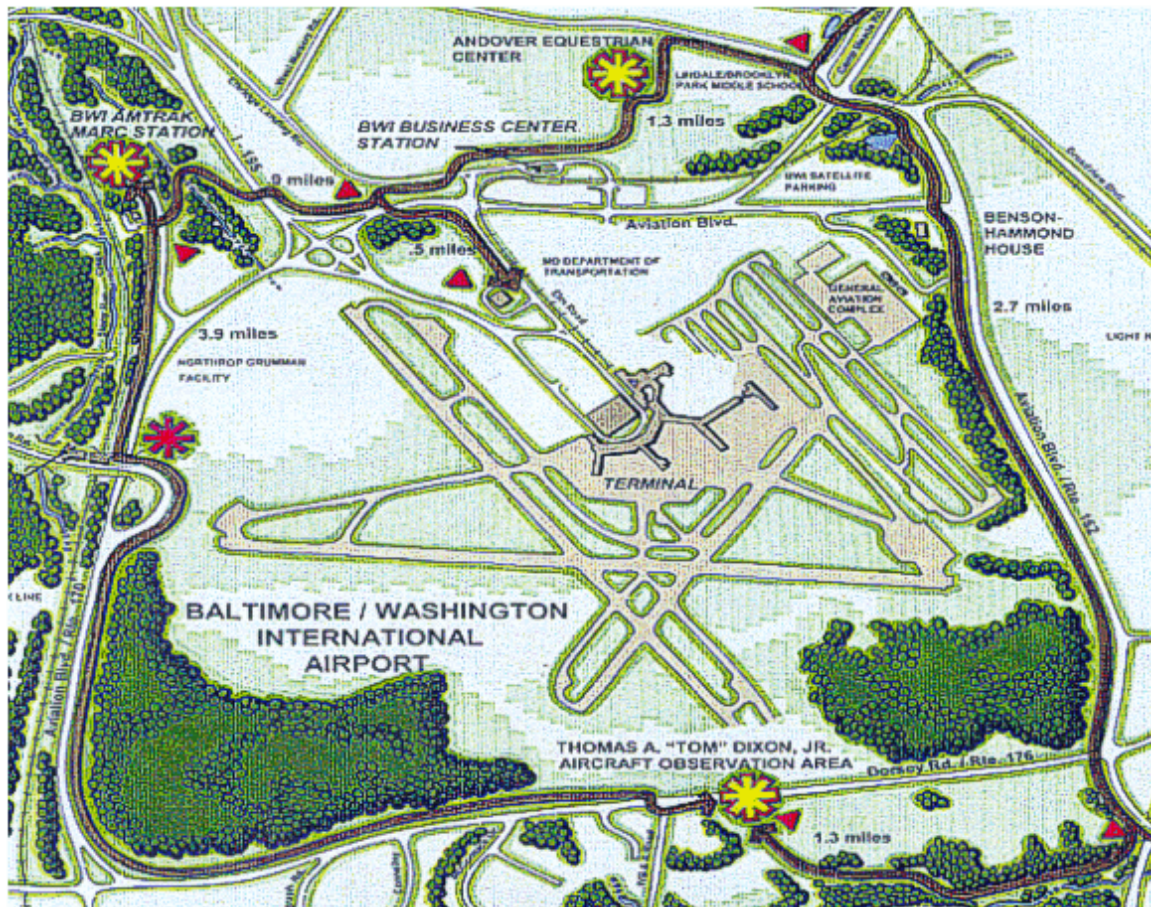
The OECCC has been successful in approaching industries to get their support for NHC projects on an individual basis. Lessons learned can be applied to the Tinicum-Fort Mifflin Trail corridor as well. Dealing with industrial landowners separately from other groups allows exploration of sensitive issues that would not normally come before a committee. Corporations tend not to sit on task forces, but will attend the occasional committee meeting if it suits their interests. They like sponsoring special events and want to keep up-to-date on heritage corridor activities.

Other successful partnerships with industries include:

- In downtown Akron, former industrial property is being redeveloped for commercial use. Major companies are relocating here, bringing 700 jobs. Goodrich moved from St. Louis to Akron in order to redevelop the brownfields, renovating an old rubber factory and the canal property from former industrial use, and in the process spending some \$30 million.
- Canton, Ohio is also redeveloping its business area; the businesses are strong supporters of the canal because economic development is a strong component of the project.
- Cleveland Metroparks is developing 6 miles into a trail with adjacent parkland, using private funding and technical assistance. Cleveland Metroparks' Ohio and Erie Canal Reservation is the first reservation in 38 years, assembled with the donation of more than 330 acres from such industries as Alcoa, American Steel & Wire and the Northeast Regional Sewage Plant—the system's 14th reservation on the canal just north of Valley View. Corporate partners are contributing natural resources and interpretive programming, while Cleveland Metroparks is responsible for facility construction and management. The Reservation includes Corporate Partner Protection Zones, lands that continue in private ownership and are not developed for other than industrial use.
- ALCOA Aluminum, BP America, and American Steel & Wire are also involved in routing the trail through their active industrial properties, and there is currently interpretation at one of the steel plants along the trail.
- The industrial "Flats" around Cleveland have been redeveloped as mixed use loft residences, light industry, and entertainment/retail
- Redevelopment of brownfields: governor proposed \$200 million bond for brownfields and also \$200 million for preservation of open space; SHPO and industries cooperating on conversion of heavy industry sites into service and recreation

Industries are now seeing the "win" for themselves in these projects. They see the trail as a potentially valuable amenity for their employees, and part of a regional economic growth strategy. There is a continued need to overcome the fears surrounding trails through industrial properties; however, people are very interested in the interpretation of the resources they see, industrial and otherwise, and consequently there are further opportunities for working with industrial landowners once safety and liability issues are addressed. These issues can often be addressed simply through appropriate trail design and location. Providing examples of successful trails through industrial properties from around the country has been very helpful in allaying the fears of industrial landowners (for example, Detroit Auto Heritage). The trail projects have also addressed industry concerns for the privacy of their operations. Businesses and industries as a whole are strong supporters because of the heritage corridor's strong economic development component. They are kept informed on the trail's progress and given small tasks appropriate to their interests and expertise.

Baltimore – Washington International Airport Loop Trail



Background / Regional Context

This trail was the first project in the country to be approved for funding as part of the Intermodal Service Transportation Efficiency Act of 1991. It is truly an example of multi-modalism. In a 14.5-mile paved loop around the Baltimore – Washington International Airport (BWI), it maintains connections to the airport, two light rail stations that serve the Baltimore area, and a heavy rail that serves the northeast corridor. An eastern spur makes a connection to the northern terminus of the Baltimore & Annapolis Trail through the airport's southeastern corner. BWI is currently the only U.S. airport with a dedicated multi-use trail around its perimeter. The scenic trail connects hikers, bicyclists, walkers, and joggers to community resources, public transportation and area attractions.

On a regional level, the BWI Trail/Baltimore & Annapolis Trail/Colonial Annapolis Maritime Trail greenway system enables cyclists, rollerbladers, equestrians, walkers and persons with disabilities to circle the periphery of a 20th-century major international airport, follow a 19th-century converted rail corridor and traverse specially-marked street lanes of an 18th-century colonial port town. On a national level, this greenway system is the only point on the eastern seaboard at which two National Millennium Trails, the East Coast Greenway and the American Discovery Trail, converge, creating a vital node in the nation's emerging green infrastructure.

The BWI Trail/Baltimore & Annapolis Trail/Colonial Annapolis Maritime Trail greenway system spans almost 42 miles along three interconnected trails from the Baltimore/Washington International Airport to the southern edge of Annapolis. BWI also connects to Patapsco State Park. The Maryland Department of Transportation, Anne Arundel County and City of Annapolis played important roles in the creation of this system.

Baltimore – Washington International Airport (BWI) is owned by the State of Maryland and is managed under the aegis of the Maryland Department of Transportation (MDOT). The loop trail surrounding BWI, complete as of the end of 2000, is a multi-agency project with MDOT taking the lead. An ISTEA award was garnered for 50 percent of the project, with the state highway department and Maryland Aviation Administration providing the remainder of the funding for the \$9.8 million project. The trail has been built and maintained through a public/private cooperative effort that includes the Anne Arundel County Department of Recreation and Parks, the Maryland Aviation Administration, the Maryland Highway Administration, the BWI Airport Neighbors Committee, the Maryland Department of Natural Resources, and the Mass Transit Administration. Trail corridor lands were turned over to the county for security patrols and managing events. MDOT maintains the highway passes, while the airport conducts basic maintenance such as lawn trimming adjacent to the trail.

The formal loop trail, mainly a Class I bike trail separated from roads, ends at the airport. Spurs from the loop trail enter the airport at specific points and run into the MDOT headquarters building. Phases I and II of the trail were planned in 1991 and constructed from 1992-94. The first trail sections opened in 1994. Phases III, IV, and VI—completed in 2000—ensured that the trail completely encircles the airport and links to trails in nearby Patapsco State Park. Design issues included the incorporation of three ADA-compatible overpasses into the trail system, one over I-95 (\$755,000) and one over state route 170 (\$337,000), along with ramp access. One section of trail was incorporated into a road widening project. The project also involved purchase of a large parcel of land for \$400,000.

Public involvement consisted of an airport neighbors committee through which BWI could coordinate on the trail project. The committee was brought into the concept and commented on the airport's plans during the trail planning process. The airport hired a bike trail consultant to plan the design and landscaping of the trail. MDOT took care of trail-related construction, including the bridges, as well as permits needed for construction. Permits were required for trail construction in wetlands, but the requirements were relatively lenient—because boardwalks were installed on pilings, the trail was not considered a disturbance to the wetlands. Other environmental compliance issues included replacing trees on more than a one-to-one basis, as required by the Maryland Forest Conservation Act, and the need for an environmental document that complied with the National Environmental Policy Act.

Liability and safety issues have not been of great concern for the BWI trail. National Fire Protection Act (NFPA) regulations cover general safety issues, some specific to airports, such as transportation of hazardous fuels at the airport. The Maryland Dept. of the Environment oversees the fire safety regulations and has not found any of these to conflict with or preclude trail use around the airport. MDOT reviewed FAA airport design guidelines for bike trails in designing the trail at BWI, and these would apply to the Tinicum-Fort Mifflin Trail project as well. Trail access and use is not seen as a security concern, even in the wake of the terrorist activity of September, 2001. The public rights-of-way surrounding the airport and related facilities such as the airport observation tower will remain open to trail users, nor is it anticipated that any changes will be made to these facilities to enhance security. The FAA requires a 10-foot-high fence around all secured airport property, and that a 10-foot-wide clear zone exist between the

perimeter fence and any public right-of-way or physical object, including vegetation. This requirement is meant to prevent unauthorized access to secured airport facilities, such as by climbing on trees to jump over the fence, and to enhance the ability of airport security personnel to monitor activities on the airport perimeter. Bike facilities within the airport terminal to serve visitors and employees are not in place, and any such plans will be reviewed to ensure airport security is maintained.

The BWI trail is close to landing lights, an issue similar to that faced by the potential trail around Philadelphia International Airport. BWI installed a six-foot fence with barbed wire around the light towers. The BWI airport decided to separate the trail from the security fence by ten feet. In other areas around the terminal, the trail is adjacent to the fence. FAA requirements as described above will likely result in the re-location of those sections of trail further away from the perimeter fence. Access to the trail is controlled by power gates, and parking access is available at a plane observation area and at a nearby county parking lot.

Trail Description & Use

The trail, which is ADA accessible, is comprised of various surfaces—smooth asphalt, wooden boardwalks (through sensitive wetland areas) and pedestrian bridges passing through a variety of landscapes—industrial, natural, commercial, and managed landscaping and open, green space. Trail surfaces are relatively smooth, mostly 6-foot wide paths, and the terrain is mostly flat. The path is usually a comfortable distance from road, with patches of trees absorbing wind and noise; however, when very close to a road, the trail is separated by a low concrete barrier. Serious road crossings are rare and mediated by crossing lights. Some sections are surprisingly close to the runways, but the surrounding scenery encapsulates riders within a serene environment. Riders can stop at one of the trail's star attractions, the Thomas A. Dixon, Jr. Aircraft Observation Area, to gawk at incoming flights. The Observation Area gives an unparalleled view of aircraft approaching the airport, along with such amenities as public restrooms, benches, a tot-lot, bicycle racks, a trellis with diagrams identifying the various types of aircraft, and refreshments during the summer months.

While multi-purpose, the trail is heavily used by bikes. Bicycle facilities at the General Aviation complex enable corporate pilots to ride in the area while on flight standby. In addition, the bike trail coordinator for FHWA advises on cycling trips in the area. Southern Living magazine printed an article highlighting a trend for tourists to fly into BWI with their bikes and use the airport as a departure point for bike tours. In addition, airport personnel bike to work, and fitness groups from area businesses use the loop trail in employee wellness programs. Northrup Grumman has installed milepost markers and stretching diagrams along the trail for this purpose.

The trail is clearly marked, with appropriately located directional signage, interpretive signage, signs locating public transit access, and wellness signs for airport and area employees wishing to work out during their breaks.

Although one can start almost anywhere on its course, the popular unofficial beginning (and ending) area is the Thomas A. Dixon Jr. Aircraft Observation Area, a small but well used park providing parking for people watching the planes coming in low as they complete their approach to BWI from the southeast. Dixon park is on the south side of Dorsey Road, the southern border of the airport.

The trail leaves from the back end of the parking lot, heading east away from the road, and runs about a quarter-mile before turning northeast to follow route 100 at a distance of several hundred feet. The trail is separated from Route 100 by thick woods. After passing through alternating clearings and forest, the pedestrian or bicyclist emerges to see I-97 joining route 100; the trail turns sharply to left and shortly comes to Stewart Avenue Bridge. A right turn will take the trail user on a connector to the 13-mile Baltimore-Annapolis hiking-biking trail and scenic Sawmill Creek Park, or to the Cromwell Light Rail Station, while a left turn will continue to follow the BWI trail.

The trail follows the left side of Stewart Avenue west and then north, making two minor road crossings before coming to Dorsey Road where it joins Hammonds Ferry Road (also known as Aviation Boulevard), the eastern border of the airport. This is the first of 5 major road crossings, all aided by pedestrian crossing lights.

The trail then follows Hammonds Ferry, with the road 3 to 50 feet to the east and the fenced airport lands to the west. Grass, occasional trees, and groups of recently-planted shrubs flank the open trail. At about mile 3.4 the trail user reaches the historic Benson-Hammond house, now the property of the Anne Arundel County Historical Society. Past this site is the major crossing at Poplar Avenue. The trail continues into a forest that separates the road from airport parking. Nearby is the community of Linthicum and trail spur access to the Linthicum Light Rail Station.



At about mile 3.9, the trail, now on sidewalk, crosses Route 170 (known also as Camp Meade Road). The trail continues on the sidewalk and passes Andover High School on the left. Right after the high school, the asphalt trail resumes and angles south into Andover Equestrian Center, an attractive horse farm with restrooms for trail users. After zigzagging through the park, the trail again enters airport land and climbs a hill at about mile 4.6. Land to the south and west is open and the hill includes an interesting vista of the general aviation portion of the airport, the Amtrak lines, and route 170. From here, the trail meanders slowly to the west as it descends through open areas with patches of young growth.

The trail emerges at the side of Elkridge Landing Road and at about mile 5.4 crosses Elkridge Landing at Elm Road, turning south to continue on the left side of Elkridge Landing. The trail then veers to the left and leaves the road, coming to a trail fork at about mile 5.7. To the left is a spur that crosses over Route 170 using a new pedestrian bridge and accesses the Maryland Department of Transportation Building in the airport complex. This is the end of the dedicated hiker/biker trail. From this point, pedestrian/bicyclist access to the BWI airport terminal is by means of a sidewalk and an on-road bicycle route beginning directly across from the

headquarters building. This route leads to the BWI Light Rail Station adjoining the International Terminal, and additional bike racks.

If the right trail fork is followed, the trail runs above an exit ramp that leads to the airport access road (I-195). The trail parallels I-195 briefly as it goes northwest, crosses over it on a newly-constructed pedestrian bridge, then continues to the northwest along the other side of I-195 before turning left into woods.

At about mile 6.4 the trail reaches the access road and parking deck for the BWI MARC/Amtrak rail station, crosses the access road, and follows off its right shoulder as it heads south toward Route 170. The trail then pulls off to the right, offering a scenic view of the valley holding the train tracks. The trail passes behind Westinghouse parking lots before getting closer to 170. Here it is mostly open, but also passes trees and recent plantings, maintaining a distance of several yards from the road. The trail then follows a ramp up to meet Stoney Run Road. Stoney Run has a wide bridge crossing Route 170, which incorporates the trail.

Shortly after crossing Route 170, the road reaches a T intersection at about mile 7.5, and the trail crosses the T, turns right, and follows to the left side of a ramp as it curves to meet 170. The trail continues south along the airport side of Route 170 and crosses a long wooden bridge. The trail path completes the Route 170 portion on a slightly winding trail in and out of trees with lots of shade.

Approaching Dorsey Road (Route 176), the trail curves gently to the left and at about mile 9 parallels the north side of Dorsey, separated from the road by about 50 feet of grass. This last eastward leg of the trail, on airport property, is open with occasional trees. The trail passes over a few wooden bridges and eventually reaches a road crossing at about mile 10.4 (at WB&A road) to cross to the south border of Dorsey, where it continues to the east, returning to the Dixon observation area.

Bike racks are available at the General Aviation facilities, observation area, and the Amtrak station adjacent to the airport. Bike rentals have been discussed, but currently there is no suitable space in the terminals. If the mechanics could be worked out with a private concessionaire, the airport would accept a proposal for this service.